TEYTEL'BAUM, B.Ya.; GUBANOV, E.F.

Thermomechanical characteristic of the molecular weight of linear polymers as exemplified by natural rubber. Dokl. AN SSSR 149 no.6:1384-1386 Ap '63. (MIRA 16:7)

1. Institut organicheskoy khimii im. A.Ye.Arbuzova AN SSSR. Predstavleno akademikom B.A.Arbuzovym.
(Polymers--Thermal properties) (Molecular weights)

L 16975-63 EPR/EWP(j)/EPF(c)/EWT(m)/ S/020/63/149/006/022/027
BDS AFFTC/ASD Ps-4/Pc-4/Pr-4 RM/WW

72

AUTHOR: Teytel'baum, B. Ya., and Gubanov, E. F.

TITLE: Thermomechanical characteristic of the molecular weight of linear polymers, with natural rubber as the example

PERIODICAL: Akademiya nauk SSSR. Doklady. v. 149, no. 6, 1963, 1384-1386

TEXT: Theoretical and experimental studies have demonstrated the possibility of estimating the molecular weight of polymers on the basis of the investigation of its thermomechanical properties. An equation has been offered relating the molecular weight M to the embrittlement temperature T_e and pour point $T_{p.p.}$ The pour point of a polymer can be largely established by determining the end point of penetration T_{ep}, found from the thermomechanical curve, which characterizes the viscosity and even molecular weight of the polymers. The authors verified this by their studies of specimens of natural rubber with different molecular weight. By special experiments they established that the value of T_{ep} is the same at temperatures below the embrittlement temperature and at room temperature, when recording the thermomechanical curve. Thus it is possible to determine T_{ep} as a function of molecular weight. This method can also be applied to crystallizing polymers, provided the melting point of the crystalline phase is below the pour point. There are 2 figures.

ASSOCIATION: Institut organicheskoy khimii im. A. Ye. Arbuzova Akademii nauk SSSR. (Institute of Organic Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR)

SUBMITTED: December 27, 1962

Card 1/2

TEYTEL'BAUM, B.Ya.; DIANOV, M.P.; BEREGOVSKAYA, M.G.; YAGFAROVA, T.A.

Thermomechanical curves of some rubbers. Kauch.i rez. 21 no.8:3-6 Ag '62. (MIRA 16:5)
(Rubber--Testing)

TEYTEL'BAUM, B.Ya.; DIANOV, M.P.

Light absorption of picric acid solutions in the presence of aromatic hydrocarbons of the kerosine fractions of the Tatar A.S.S.R. Izv. Kazan.fil. AN SSSR. Ser.khim.nauk no.6:116-122 '61. (MIRA 16:5)
(Tatar A.S.S.R.--Petroleum) (Hydrocarbons)
(Picric acid--Spectra)

L 10830-63 EPR/EPF(c)/EWP(j)/EWT(m)/BDS--AFFTC/ASD--Pr-4/Ps-4/Pc-4--RM/WW
ACCESSION NR: AP3000755 S/0020/63/150/003/0608/0611

AUTHOR: Teytel'baum, B. Ya.; Yagfarova, T. A.; Anoshina, N. P.; Naumov, V. A.

TITLE: Multiple investigation of the crystallization of polychloroprene rubber - Nairit

SOURCE: AN SSSR. Doklady, v. 150, no. 3, 1963, 608-611

TOPIC TAGS: crystallization, polychloroprene rubber, elasticity, crystallinity

ABSTRACT: The crystallization process in Nairit was studied by thermo-mechanical, thermographic and X-ray methods. The deformation of freshly-prepared polymer faded out (indicating crystallization) in 15 minutes at 0°, in 2 hours at room temperature. Thermomechanical curves showed maximum crystallinity for unheated samples and maximum elasticity on heating to 50° and holding at room temperature for one hour, elasticity decreasing with prolonged holding. The plateau of the peaks in a thermogram is dependent on degree of crystallinity. Thermomechanical curves can be used to evaluate degree of crystallinity. Supplementary X-ray analyses are necessary to determine absolute percentage of crystallization. The kinetics of Nairit (and other elastomers) crystallization can be studied by a combination of these methods. Orig. art. has: 4 figures.

Card 1/2 ASSOCIATION: Institute of Organic Chemistry of Academy of Sci.

TEYTEL'BAUM, B.Ya.; GUBANOV, E.F.; NAUMOV, V.A.

Crystallization of natural rubber. Dokl.AN SSSR 145 no.5:1077-1080 '62. (MIRA 15:8)

1. Khimicheskiy institut im. A.Ye.Arbuzova AN SSSR i Institut organicheskoy khimii AN SSSR. Predstavleno akademikom B.A. Arbuzovym.

(Rubber) (Crystallization)

TEYTEL'BAUM, B.Ya.

Thermomechanical curves of polymers under constant load. Vysokom. soed. 4 no.5:655-661 My '62. (MIRA 15:7)

1. Khimicheskiy institut imeni A.Ye.Arbuzova Kazanskogo filiala AN SSSR.

(Polymers—Testing)

S/020/62/145/005/015/020
B106/B144

B 9300

AUTHORS: Teytel'baum, B. Ya., Gubanov, E. F., and Naumov, V. A.

TITLE: Crystallization of natural rubber

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1077-1080

TEXT: The crystallization in natural rubber was studied by thermomechanical and X-ray diffraction analyses. In the range from -80 to 60°C and under alternating loads of 0.64 and 3.2 kg/cm, a sharp increase of deformability occurs at 0°C, due to fusion of the crystallites. From -35 to 0°C, the deformability is smaller owing to an additional crystallization and solidification of rubber near optimum crystallization temperature (-25°C). When rubber is cooled from room temperature to below vitrification temperature within 1 hr, practically no crystallites are formed except at the optimum crystallization temperature, since crystallization takes longer at other temperatures; it can be completely prevented by quickly freezing the rubber with liquid nitrogen. The melting point of the crystallites depends on their temperature of formation. In "tanned" rubber melting at ~45°C, the deformability in the highly elastic state is much lower than in rubbers

Card 1/3

Crystallization of natural rubber

crystallizing at low temperatures, but rises suddenly at 45 - 48°C. Heating the "tanned" rubber to >50°C destroys the crystallinity. Such samples do not show any jump in the deformability at 0° or 45°C, but their deformability on transition to the highly elastic state (-60°C) is much higher than in the initial rubber. When a rubber heated previously to 53°C is kept at -25°C for 1.5 hrs, crystallites are formed which melt at 0°C. When "tanned" rubber is being cooled to low temperatures, crystallization occurs without the temperature needing to be kept constant for long. The crystalline phase, formed at room temperature, therefore initiates crystallization at low temperatures. X-ray analyses showed that the crystalline phases formed at different temperatures were independent of their melting points. This is explained by the fact that at -25°C the crystallites are formed so quickly that no equilibrium is attained. The low melting point may be due to strong internal stresses and/or to the small size of quickly formed crystallites. The results of the thermomechanical and the X-ray analyses are complementary and this combination may be useful for studies of other polymers also. There are 4 figures. The most important English-language references are: C. W. Bunn, Proc. Roy. Soc., A, 180, 40 (1942); D. E. Fischer, Proc. Phys. Soc., 60, 99 (1948).

Card 2/3

S/020/62/145/005/015/020
B106/B144

Crystallization of natural rubber

ASSOCIATION: Khimicheskiy institut im. A. Ye. Arbuzova Akademii nauk SSSR (Chemical Institute imeni A. Ye. Arbuzov of the Academy of Sciences USSR). Institut organicheskoy khimii Akademii nauk SSSR (Institute of Organic Chemistry of the Academy of Sciences USSR)

PRESENTED: April 9, 1962, by B. A. Arbuzov, Academician

SUBMITTED: April 5, 1962

Card 3/3

S/138/62/000/008/002/007
A051/A101

15,9200

AUTHORS: Teytal'baum, B. Ya., Dianov, M. P., Beregovskaya, M. G., Yagfarova, T. A.

TITLE: Thermomechanical curves of several rubbers

PERIODICAL: Kauchuk i rezina, no. 8, 1962, 3 - 6

TEXT: The thermomechanical curves of several rubbers under various loads, within a temperature interval from -120 to +450°C, were recorded, using an automatic recorder. The method of continuous weight application was used. The resultant curves reflected the characteristic qualities of the investigated rubbers, leading to the derivation of certain quantitative units: T_g - vitrification temperature, T_f - fluidity temperature; and a relative evaluation of the degree of deformation of the material at any given temperature. The curves were plotted over temperature - deformation coordinates by a recorder designed at the Kazan' branch of the Academy of Sciences of the USSR. The thermomechanical curves produced are shown in figures. The СКД (SKD) curve is thought to be influenced by the presence of a crystalline phase. The figures obtained for this rubber under a

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S/138/62/000/008/002/007
A051/A101

Thermomechanical curves of several rubbers

32 kgf/cm^2 load were: T_g = -115°C, h_g (curve elevation) = 4.5%, T_f = -22°C, T_k (temperature of penetration) = -7°C. Under a 3.2 kgf/cm^2 load T_f = -16°C, T_k = =-1°C. There is 1 table, and one set of graphs.

Card 2/2

TEYTEL'BAUM, B.Ya.; YAGFAROVA, T.A.; DIANOV, M.P.; GUBANOV, E.F.

Thermal transformations of some rubbers studied by the method of thermomechanical curves. Dokl. AN SSSR 140 no.5:1132-1135 O '61. (MIRA 15:2)

1. Khimicheskiy institut im. A.Ye. Arbuzova i Institut organicheskoy khimii Kazanskogo filiala AN SSSR. Predstavleno akademikom B.A.Arbuzovym.
(Rubber—Thermal properties)

37429

S/190/62/004/005/005/026
B139/B138

15.8500 (2209, 2407)

AUTHOR: Teytel'baum, B. Ya.

TITLE: Thermo-mechanical curves for polymers under continuous load

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 5, 1962, 655-661

TEXT: Two methods of establishing temperature-deformation curves of polymers are compared, namely (A) that of V. A. Kargin (periodically loading and unloading the specimen at each stage of heating) and (B) that of Ye. I. Regirer and M. S. Kalantarova(continuous load with rising temperature). In both methods the plateaux of the curves characterize the highly elastic range, with the rise that characterizes plastic flow beginning at yield point T_T. Complete penetration of the indenter corresponds to point T_K at which the rising curve intersects the line of 100% deformation. With method B, however, the plateau does not indicate that deformability is unchanged, but rather, that an increase in deformability is prevented by the greater rigidity of the polymer. On the development of a space lattice, in the high-elasticity range ($T_c < T_o < T_T$)

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Thermo-mechanical curves for ...

(where T_c is brittle point and T_o the temperature at which space lattices form), and in the viscous range ($T_o > T_T$), method B produces plateaux while method A shows a reduction in deformability to nearly zero. The rise in both curves at T_T corresponds to transition to the viscous state, not of the original polymer, but of the destructible product of their cross-linking. The B-type curve reflects thickness variations which are not only due to externally applied pressure but also to "post-polymerization", destruction processes with gas liberation and the effects of thermal expansion. B-type curves contain more information, but since, however, different causes may produce apparently similar curves their correct interpretation calls for control operations such as varying the load, rate of heating and nature of the gaseous medium, interrupting the experiment at a certain stage and repeating it later, after the specimen has cooled, and comparison with the results of independent studies. This is similar to thermographic analysis which first became practicable through the development of automatic recording methods for heating curves, by Le Châtelier, N. S. Kurnakov, and Saladen. There are 4 figures.

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Thermo-mechanical curves for ...

S/190/62/004/005/005/026
B139/B138

ASSOCIATION: Khimicheskiy institut im. A. Ye. Arbuzova Kazanskogo filiala AN SSSR (Institute of Chemistry imeni A. Ye. Arbuzov of the Kazan' Branch of AS USSR)

SUBMITTED: March 17, 1961

Card 3/3

29123
S/020/61/140/005/020/022
B101/B110

11.2211

AUTHORS: Teytel'baum, B. Ya., Yagfarova, T. A., Dianov, M. P., and Gubanov, E. F.

TITLE: Study of thermal transformations of some rubbers by means of thermomechanical curves

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 5, 1961, 1132-1135

TEXT: The authors attempted the continuous recording of thermomechanical curves for rubbers by an improved method (B. Ya. Teytel'baum, Peredovoy nauchno-tekhnich. i proizv. opyt, Tsentr. inst. tekhn.-ek. inf., ser. 32, 1961, no.4/2). Recording was performed automatically under constant load and with uniform temperature increase in nitrogen atmosphere. An ЭПП-09 (EPP-09) electronic potentiometer was used as recorder. The recording chart was advanced according to the deformation. Rubber specimens (4 mm diameter, 2 mm height) were tested at -120 to +450°C. The rate of heating was 2 deg/min, the load 3.2 kg/cm^2. Deformation is indicated in relative percents. The following was found: (1) For all natural rubbers (smoked sheets), a "stop" was observed on the curve corresponding to the melting

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of the crystalline phase at ~ 0°C. If the sample is controlled by thermostat at the optimum crystallization temperature (-25°C), the step already appears for slight deformation. This confirms its relationship with the crystalline phase. Such an affect was not observed in any synthetic rubber. (2) Butadiene rubbers СКБ(SKB), СКВ(SKV), СКБМ(SKBM) and piperylene rubber СКП(SKP) synthesized by alkaline catalysts showed characteristic vitrification temperatures. The thermomechanical curves ascended immediately after exceeding the vitrification temperature. Thus, plastic deformation immediately occurs in these rubbers besides elastic deformation. (3) Butadiene rubber of the type СКЛД(SKLD) synthesized by a lithium catalyst and having low plasticity behaved differently. Fig. 3 shows thermomechanical curves for SKLD rubbers of high and low plasticity. Cross linking was found to occur by heating to 250°C. If SKLD rubbers of high plasticity were heated to 250°C, they showed the same thermomechanical curve as rubbers of low plasticity. Other butadiene rubbers such as SKB, СКД(SKD) (synthesized by a complex catalyst) behaved similarly. In natural rubbers, isoprene rubbers СКИ(SKI) and piperylene rubber SKP, no cross linking was attained by heating to 250°C. Therefore, butadiene rubbers may be easily distinguished from other rubbers by heating them to 250°C and

Study of thermal transformations...

recording the thermomechanical curve. Cross linking occurs at 250°C in butadiene rubbers, while destruction takes place in pentadiene rubbers. The authors thank M. G. Beregovskaya for the supply of the specimens, and for a discussion. A paper by A. A. Tager et al. (Khim. prom. no. 4, 209 (1955)) is mentioned. There are 4 figures and 7 Soviet references.

ASSOCIATION: Khimicheskiy institut im. A. Ye. Arbuzova (Chemical Institute imeni A. Ye. Arbuzov); Institut organicheskoy khimii Kazanskogo filiala Akademii nauk SSSR (Institute of Organic Chemistry of the Kazan' Branch, Academy of Sciences USSR)

PRESENTED: May 19, 1961 by B. A. Arbuzov, Academician

SUBMITTED: April 13, 1961

Card 3/3

TEYTEL'BAUM, B.Ya.; DIANOV, M.P.

Methods of recording the thermomechanical curves of polymers.
Vysokom.soed. 3 no.4:594-601 Ap '61. (MIRA 14:4)

1. Khimicheskiy institut Kazanskogo filiala AN SSSR.
(Polymers)

15.8500 1372, 2209 21134
11.2314 S/190/61/003/004/009/014
B101/B207

AUTHORS: Teytel'baum, B. Ya., Dianov, M. P.

TITLE: The method of recording the thermomechanical curves of polymers

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 4, 1961, 594-601

TEXT: This paper reports on the design of an apparatus for the continuous recording of thermomechanical curves (TMC) and on some experiments conducted. Fig. 1 shows a schematical drawing of the apparatus. О is the sample contained in a vessel of 4 mm inner diameter and 2 mm height. It is part of the heater Б (aluminum). Б is cooled with liquid air before the beginning of the experiment by means of the Dewar vessel Д, subsequently heated at constant temperature rise. The linear increasing voltage of ДЛН, the thermocouple ТУ and the electronic relay P_2 serve for this purpose. P_2 switches in the heating current as soon as the emf of ТУ has reached the voltage of ДЛН. The sample is loaded with the weight Г of the stamp Ш, the weight of which is equalized by the scale beam К and counterweight. The contact needle И is fixed at the end of К. The vessel with the samples is

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21134
S/190/61/003/004/009/014
B101/B207

The method ...

fixed at the cross beam Т by means of rods. The micrometer screw М forms part of Т and is moved by means of a СД-2 (SD-2) synchronous engine. (Insulators are between К and И, as well as between Т and М). И separates from М when the sample is deformed (falling of the stamp П). Subsequently, the relay P_1 switches in the engine (a) of the record chart of the ЭПП-09 (EPP-09) recorder and SD-2, which are synchronous until contact is re-established between И and М. The maximum recording rate of deformation depends on the rpm. of the Warren engine. The temperature of the sample is measured with the thermocouple ТИ, which is connected to the input (b) of EPP-09. The cold junctions ХС are kept at 20°C by means of the thermostat. The potentiometer ПС permits the recording of both positive and negative temperatures. At (c), N_2 is blown through. A special device was designed to bring various diagrams to the same scale by means of projecting the record chart located on an inclined glass plate onto a horizontal table. Fig. 3 shows the TMC of polyvinyl chloride at different stress. At 100, 125, and 150°C, the diagrams of Fig. 4 were obtained herefrom. Linear function between deformation and stress could be observed only in highly elastic state (up to 100°C). At higher temperatures, a deviation from linearity was observed owing to plastic deformation. Fig. 5 shows the dependence of the vitrifica-

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The method ...

tion temperature T_v and the softening point T_s on the stress. The real T_s was determined by recording T_s at various small stress by extrapolation with respect to zero stress. Similar investigations were also carried out on polymethyl methacrylate and the copolymer from the allyl dichloro vinyl ester of phenyl phosphinic acid and 3% methyl methacrylate provided by N. I. Rizpolozhenskiy and A. A. Muslinkin. The optimum stress was found to depend on the kind of the polymer to be investigated. At high stress, T_v can be accurately determined, while the determination of T_s requires a small load. Furthermore, the course of TCC was found to be highly dependent on the preparation of the sample. Fig. 8 shows this for polymethyl methacrylate. V. A. Kargin and V. L. Tsetlin are mentioned. There are 9 figures and 8 Soviet-bloc references.

ASSOCIATION: Khimicheskiy institut Kazanskogo filiala AN SSSR (Chemical Institute of Kazan' Branch, AS USSR)

SUBMITTED: July 14, 1960

Card 3/7

DIANOV, M.P.; TEYTEL'BAUM, B.Ya.

Photometric picric acid method for the determination of naphthalene in its mixtures with phenol. Zhur.anal.khim. 15 no.1:119-120 J-F '60. (MIRA 13:5)

1. Chemical Institute of Kazan Branch, Academy of Sciences, U.S.S.R., Kazan.
(Naphthalene) (Phenol)

5 (4) SOV/20-128-1-28/58

AUTHORS: Teytel'baum, B. Ya., Dianov, M. P.

TITLE: Spectrophotometric Investigation of Picrates of Aromatic Hydrocarbons in Solution

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 106-109 (USSR)

ABSTRACT: In the present paper the authors attempted to solve the problem as to whether aromatic hydrocarbons may be determined on the basis of light absorption of their picrates. As a solvent 1,2-dichloro ethane was used which solves picric acid and hydrocarbons as well as picrates. In a relatively wide spectral range the absorption curves were plotted and for a series of solutions the molar extinction coefficients ε were computed (Fig 1). Absorption spectra of the solutions investigated may be divided into 3 ranges: In the shortwave range (222-300 mμ) absorption bands characteristic of naphthalene hydrocarbons occur. In the medium range there is the absorption maximum of picric acid (340 mμ). For differently concentrated solutions and solutions with heterogeneous hydrocarbons the extinction curves are equal. The long-wave range is characterized by the absorption of picrates. Besides naphthalene and its methyl-substituted derivatives, also individual non-condensated aromatic

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hydrocarbons were investigated. With all solutions investigated absorption edges are almost parallel (Table 1) in the visible part of the spectrum. The investigation was carried out on the spectrophotometer SF-4 at room temperature. The following investigation results were found: By formation of picrates of aromatic hydrocarbons, the absorption edge of picric acid is shifted towards the longwave range. The amount of shifting depends on the nature of the hydrocarbon and on the concentration of the solution. With an increase in the number of alkyl groups in the hydrocarbon molecule, the absorption edge is shifted correspondingly. The shifting of the absorption edges is hardly influenced by a complication in the structure of alkyl groups, or by a variation of their position in the ring. This shifting may also serve at a certain optical density - just as the absorption quantity on a certain wave length - for the determination of aromatic hydrocarbons by the spectrophotometric and colorimetric method. The authors thank L. A. Mukhamedova and Ye. A. Robinzon for providing the preparations. There are 2 figures, 1 table, and 7 references, 5 of which are Soviet.

Spectrophotometric Investigation of Picrates of Aromatic Hydrocarbons in Solution

SOV/20-128-1-28/58

ASSOCIATION: Khimicheskiy institut Kazanskogo filiala Akademii nauk SSSR (Institute of Chemistry of the Kazan' Branch of the Academy of Sciences, USSR)

PRESENTED: April 27, 1959, by B. A. Arbuzov, Academician

SUBMITTED: April 20, 1959

Card 3/3

5(4)

AUTHOR: Teytel'baum, B. Ya. SOV/20-125-2-27/64

TITLE: On Isotherms of the Properties of Binary Liquid Systems of Which One Component Is Isomerized by the Influence of the Other (Ob izotermakh svoystv dvoynykh zhidkikh sistem, odin iz komponentov kotorykh izomerizuyetsya pod vliyaniyem drugogo)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 2, pp 337-340 (USSR)

ABSTRACT: The author has discussed the problem mentioned in the title from a general point of view, and derived types of isotherms for systems of this kind. In addition to this he has shown the peculiarities and differences in these isotherms as compared with those which are related to systems with formation of additive compounds. In the investigation of the interaction between the components in the liquid phase and in the binary phase the formation of additive compounds is usually assumed to occur on the pattern $mA + nB \rightleftarrows A_mB_n$. However, the chemical interaction of the components is by no means fully explained by this case. It may occur on the

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On Isotherms of the Properties of Binary Liquid Systems of Which One Component Is Isomerized by the Influence of the Other

SOV/20-125-2-27/64

pattern of a double exchange. In this process 4 types of molecules are in equilibrium in the liquid phase: $AR + BR' \rightleftarrows AR' + BR$. The investigation of the isotherm shape is far more complicated with regard to this reaction type than it is with regard to the formation of additive compounds. In respect of complex molecules (hypothetically designated by ACR), a molecule regrouping $ACR + BR' \rightleftarrows AR'C + BR$ may occur. The special case of $R' = R$ is of particular interest. In this case, an isomerization $ACR \rightleftarrows ARC$ takes place, in which the 2nd component does not formally participate, but in which it actually plays the part of a catalyst. In the absence of this 2nd component, isomerization will not occur. Furthermore, 2 cases are discussed: 1) The intensity of the property of the isomerizing component is higher than that of the other one (BR). In this case there are two possibilities: a) The intensity of the properties $ARC > ACR$ (Fig 1, patterns 1a and a'); b) $ARC < ACR$. Case 2) The intensity of the property of the isomerizing component is lower than that of the other one (BR). Here, too, there are two possibilities: a) $ARC > ACR$

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On Isotherms of the Properties of Binary Liquid Systems of Which One Component Is Isomerized by the Influence of the Other

SOV/20-125-2-27/64

(Fig 1, pattern 2a'); b) ARC (ACR. From the above-mentioned facts we arrive at the conclusion that the isotherms of such systems as contain a component which is isomerized by the action of the 2nd component may possess the same geometrical properties as those of systems with the formation of additive compounds: curvature, extreme values, deflection points. By way of conclusion 4 characteristics of systems with isomerization are set forth. From them it can be seen that systems have to be studied at different temperatures and at different reaction durations if the type of interaction concerned is to be differentiated from the ordinary formation of additive compounds. One instance of isomerization is the regrouping, discovered by A. Ye. Arbuzov (Ref 4), of phosphoric acid esters into esters of the alkylphosphinic acids by the action of halogen alkyls. There are 1 figure and 5 Soviet references.

ASSOCIATION: Khimicheskiy institut Kazanskogo filiala Akademii nauk SSSR (Chemical Institute of the Kazan' Branch of the Academy of

Card 3/4

On Isotherms of the Properties of Binary Liquid Systems of Which One Component Is Isomerized by the Influence of the Other

SOV/20-125-2-27/64

Sciences, USSR)

PRESENTED: December 8, 1958, by B. A. Arbuzov, Academician

SUBMITTED: December 2, 1958

Card 4/4

TEYTEL'BAUM, B.Ya.; OSIPOV, O.A.

Study of the surface layer of fluid systems. Part 7. Surface stratification and volumetric properties of solutions of binary systems. Koll.zhur.17 no.1:57-62 Ja-F '55. (MLRA 8:3)

1. Khimicheskiy institut im. A Ye.Arbuzova Kazanskogo filiala AN SSSR (for Teytel'baum). 2. Rostovskiy universitet im. V.M.Molotova (for Osipov).
(Surface chemistry) (Systems (Chemistry))

5.5300

77763
SOV/75-15-1-25/29

AUTHORS: Dianov, M. P., Teytel'baum, B. Ya.

TITLE: Brief Communications. A Photometric Picrate Method of Determination of Naphthalene in Mixtures With Phenol

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol 15, Nr 1, pp 119-120 (USSR)

ABSTRACT: This simple and accurate method is based on the difference of the bathochromic shifts of naphthalene and phenol picrates. Quartz optics are not necessary (FEK-M spectrophotometer was used). 0.1 Dichloroethane solutions of picric acid and naphthalene are used. Picrates of phenol absorb at about 412-425 mμ, and those of naphthalenes at 455 mμ and up. The concentrations are determined from calibration curves. The accuracy of this method is up to 1%. There is 1 figure; 1 table; and 3 Soviet references.

ASSOCIATION: Chemical Institute of the Kazan' Branch of the Academy

Card 1/2

Brief Communications. A Photometric Picrate Method of Determination of Naphthalene in Mixtures With Phenol

77763
SOV/75-15-1-25/29

of Sciences, USSR, Kazan' (Khimicheskiy Institut Kazanskogo filiala AN SSSR, Kazan')

SUBMITTED: March 9, 1959

Card 2/2

L 2115-65 EWT(m)/EPF(c)/EPR/EWP(j) Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP5005598 S/0190/65/007/002/0299/0304

AUTHOR: Teytel'baum, B. Ya.; Gubanov, E. F.; Adamovich, E. P.; Dianov, M. P.; Makarova, N. N.

TITLE: Determination of the molecular weight of linear polymers by the thermomechanical method

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 2, 1965, 299-304

TOPIC TAGS: thermomechanical method, rubber, molecular weight

ABSTRACT: A new rapid and accurate method has been proposed for determining the molecular weight of amorphous linear polymers, based on thermomechanical curves. The method is based on the correlation of the temperature (T_k) of the completion of penetration of an indenter into the specimen with the intrinsic viscosity (η) of solutions of the specimen, and, hence, its molecular weight (M). Once a T_k versus M calibration curve has been plotted, the molecular weight determination is reduced to the plotting of a thermomechanical curve to find T_k and reading M from the calibration curve. In contrast to existing methods, the new method does not require the determination of the glass-transition flow and temperatures. It is applicable to polymeric homologs which do not exhibit high elastic properties. The correlation

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L 27185-65

ACCESSION NR: AP5005598

between T_k and M or n was shown experimentally for natural, isoprene, chloroprene (KR-A—type Nairit) and SKN-40 nitrile rubbers, polyisobutylene, and liquid thiocol. The thermomechanical measurement conditions which will ensure a reliable correlation were determined. Orig. art. has: 7 figures. [SM]

ASSOCIATION: Institut organicheskoy khimii AN SSSR, Kazan (Institute of Organic Chemistry, AN SSSR); Khimicheskiy institut im. A. Ye. Arbuzova AN SSSR (Chemical Institute, AN SSSR)

SUBMITTED: 23Apr64 ENCL: 00 SUB CODE: OC, NP

NO REF SOV: 006 OTHER: 002 ATD PRESS: 3191

KHRUSHCHOVA, V.A.; TEYTEL'BAUM, F.M.

Significance of the serological method in the laboratory diagnosis of diphtheria. Vop. okh. mat. i det. 8 no.7:22-25 Jl '63. (MIRA 17:2)

1. Iz Vasileostrovskoy detskoy infektsionnoy bol'nitsy (glavnyy vrach - zasluzhennyy vrach RSFSR N.A. Nikitina), Leningrad.

KHRUSHCHEVA, V.A., kandidat meditsinskikh nauk; TEYTEL'BAUM, F.M.; MARKOVA, A.A., kandidat meditsinskikh nauk

Serological diagnosis of diphtheria. Vop.okh.mat. i det. 1 no.4: 13-17 Jl-Ag '56. (MLRA 9:9)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo pediatricheskogo instituta (dir. - prof. A.L.Libov) i detskoyinfektsionnoy bol'nitsy Sverdlovskogo rayona Leningrada (glavnyy vrach N.A.Nikitina)
(DIPHTHERIA--DIAGNOSIS)

KHRUSHCHOVA, V.A., kand.med.nauk; TEYTEL'BAUM, F.M.

Use of the method of phage typing of staphylococci in the study of staphylococcal diseases in children. Vop. okh. mat. i det. 6 no.7: 52-57 Jl '61. (MIRA 14:8)

1. Iz detskoy infektsionnoy bol'nitsy Sverdlovskogo rayona Leningrada (glavnyy vrach - zasluzhennyy vrach RSFSR N.A.Nikitina).
(STAPHYLOCOCCAL DISEASE) (BACTERIOPHAGE)

KRUSHCHOVA, V.A.; TEYTEL'BAUM, F.M.; MAYANTS, Sh.G.

Determination of the toxigenicity of staphylococci by precipitation in agar. Zhur. mikrobiol., epid. i immun. 40 no.4:43-46 Ap '63. (MIRA 17:5)

1. Iz Detskoy infektsionnoy bol'nitsy Sverdlovskogo rayona Leningrada.

Name: TEYTEL'BAUM, Grigoriy Misonovich

Dissertation: Disturbance of hemodynamics in some cases of infectious diseases

Degree: Doc Med Sci

Affiliation: [not indicated]

Defense Date, Plsce: 7 Jul 55, Council of Military Med Acad imeni Kirov

Certification Date: 7 Jul 56

Source: BMVO 5/57

TEYTEL'BAUM, Grigoriy Nisonovich; LILENKO, S.I., red.

[Hemodynamic disorders in some infectious diseases] Narusheniia gemodinamiki pri nekotorykh infektsionnykh zabolevaniiakh. Leningrad, Meditsina, 1964. 187 p. (MIRA 17:8)

TEYTEL'BAUM, I.B. (Leningrad, Mozhayskaya ul., d.15, kv.24)

Complications following intra-arterial blood transfusion. Vest. khir. 90 no.5:137-138 My '63 (MIRA 17:5)

1. Iz khirurgicheskogo otdeleniya (zav. - kand.med. nauk A.I. Kalendarev) Pushkinskoy bol'nitsy imeni Semashko (glavnyy vrach - Ye.D. Polishchuk-Kulikova).

TEYTEL'BAUM, I. G.

М. Л. Цетлин,
Л. И. Шестаков

О синтезе одного класса схем на ферритотранзисторных элементах.

II. СЕКЦИЯ ФЕРРИТОВЫХ УСТРОЙСТВ СВЧ

Руководитель А. Л. Микаэлян

11 июня
(с 10 до 16 часов)

Совместное заседание с секцией электроники

В. Н. Зубков,
М. С. [illegible]

Некоторые вопросы теории параметрических усилителей.

В. П. Тычинский

К теории ферритового усилителя.

В. П. Тычинский,
Ю. Т. Деркач,
В. В. [illegible]

Экспериментальное исследование ферритового усилителя.

60

А. Л. Микаэлян,
И. З. [illegible]

Некоторые результаты исследования ферритовых усилителей

А. С. Тагер

К теории параметрического усиления в волноводных системах.

11 июня
(с 18 до 22 часов)

А. А. Пистолькорс,
Сюй Янь-Шэнь

Колебания малой гиротропной сферы в поле плоской волны.

А. Л. Микаэлян,
В. Я. Антонянц

Смешение сверхвысоких частот в ферритах.

А. Л. Микаэлян,
А. К. [illegible]

О ферритовых вентилях предельного типа

А. Л. Микаэлян,
И. Г. Тейтельбаум

Применение ферритов для управления частотой электромагнитных волн

61

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORIE), Moscow, 8-12 June. 1959

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S/137/62/000/004/164/201
A154/A101

1.2300

AUTHORS: Teytel'baum, L.N.; Chumadin, I.T.

TITLE: Automatic half-submerged arc welding of aluminum equipment

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 23, abstract 4E115 ("Montazhn. i spetsializor. raboty v str-ve", 1961, no. 11, 3 - 7)

TEXT: The Promtekhmontazh and Orgproyekttekhmontazh trusts have successfully mastered and introduced automatic half-submerged arc welding (svarka polu-otkrytoy dugoy po sloyu flyusa) of Al containers. These containers are made of A1УК (A1UK) aluminum, are 2.3 m in diameter and 10.5 m long, and have 8 mm thick walls and two spherical bottoms of 10 mm thick sheet. 2 mm АД1 (AD1) electrode wire and АН-А1 (AN-A1) flux were used for the welding. The metal and welding wire were prepared for welding by normal means. The optimum flux layer - 8 to 9 mm - was found empirically. Welding was done with one electrode and two wires (by the split electrode). АТС-17МУ (TS-17MU) tractor was used for annular welds and an АДПГ-500 (ADPG-500) tractor for the longitudinal welds of the shells and the butt welds of the bottoms; the tractors were adapted for half-submerged arc welding. A special production line was organized for making the elements, and assembling

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Automatic half-submerged arc welding of S/137/62/000/004/164/201
A154/A101

and welding the equipment on an assembly site. For welding the annular welds dispensable (neostayushchiyesya) backing rings were used.

V. Klyuchnikova

[Abstracter's note: Complete translation]

Card 2/2

TEYTEL'BAUM, L.N., inzh.; CHUMADIN, I.T., inzh.

Automatic welding of aluminum equipment with a semi-submerged arc along a layer of flux. Mont. i spets. rab. v stroi. 23 no.11:3-7 N '61. (MIRA 16:7)

1. Gosudarstvennyy soyuznyy trest po tekhnicheskim montazhnym rabotam Glavtekhmontazha Ministerstva stroitel'stva SSSR.
(Aluminum--Welding)

AFANAS'YEVA, V.M.; SOKOLOVA-PONOMAREVA, O.D., prof.; ZVER'KOVA, F.A.; SPERANSKIY, G.N., prof.; VEL'TISHCHEV, Yu.Ye.; TABOLIN, V.A.; TEYTEL'MAN, M.A.

Book reviews. Pediatriia 42 no.1:88-93 Ja'63. (MIRA 16:10)
(PEDIATRICS)

MARKOVICH, I.M., doktor tekhn.nauk; TEYTEL'BAUM, V.N.

Method of efficient distribution of active power in a consolidated electric power system. Elektrichestvo no.1:10-11 Ja '62. (MIRA 14:12)

1. Energeticheskiy institut imeni Krzhizhanovskogo.
(Interconnected electric utility systems)
(Electric power distribution)

AUTHOR: Teytel'baum, V.N. SOV/20-121-5-11/50

TITLE: Comparison of Numbers in the Czech Number System (Sravneniye chisel v Cheshskoy sisteme schisleniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 5, pp 807-810 (USSR)

ABSTRACT: Let $2 = p_1 < p_2 < \cdots < p_n$ be positive prime numbers. The Czech system is a number system in which a number is represented by the totality of its smallest non-negative remainders mod $p_1, p_2, \ldots, p_n$. Under restriction to non-negative integers smaller than the product $p_1 p_2 \cdots p_n$, the author describes a method for the comparison of the magnitude of two numbers given in the Czech system The method is valid if $p_1 = 2$ only. Let $M = p_1 p_2 \cdots p_n$. Numbers of the first half are numbers a for which $0 \leq a < \frac{M}{2}$, for the numbers of the second half holds $\frac{M}{2} \leq a < M$.

Theorem: Let a and b belong to one half. Necessary and sufficient that $a \geq b$, is that [a-b] belongs to the first half.
Here [a-b] is an especially defined so-called table difference.
The above theorem permits to reduce the comparison of two numbers to the answering of the question, to which half there belongs a

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given number. The method demands 1÷6(n-2) steps maximally. There is 1 Czecho-Slovakian reference.

PRESENTED: April 10, 1958, by M.V.Keldysh, Academician

SUBMITTED: April 8, 1958

TEYTEL'MAN, M.A.

"Concern of the Communist Party and the Soviet government for the health of workers" by V.P.Barilenko. Reviewed by M.A.Teitel'man. Sov.zdrav. 16 no.3:60-61 Mr '57. (MLRA 10:6)
(PUBLIC HEALTH)
(BARILENKO, V.P.)

TEYTEL'MAN, M.A.

"Eczema" by L.I.Fandeev. Reviewed by M.A.Teitel'man. Vest. derm. i ven. 33 no.3:83-84 My-Je '59. (MIRA 12:9)
(ECZEMA) (FANDEEV, L.I.)

TEYTEL'MAN, M. A.

TEYTEL'MAN, M. A.: "The condition of the liver in the early stages of syphilis." Published by "Sovetskiy Kuban'". Kuban' State Medical Inst imeni Red Army. Krasnodar, 1956.
(Dissertation for Degree of Candidate in Medical Science).

SO: Knizhnaya letopis', No 23, 1956

TEYTEL'MAN, M.A., IKONNIKOV, N.N.

"Sexual disorders in men; etiology, clinical aspects, and treatment" by I.M. Porudominskii. Reviewed by M.A. Teitel'man, N.N. Ikonnikov. Vest.derm. i ven. 32 no.4:83-84 Jl-Ag '58 (MIRA 11:10)
(IMPOTENCE)
(PORUDOMINSKII, I.M.)

TEYTEL'MAN, M.A.

"Courses and achievements in controlling dermatomycosis in Soviet Moldavia" by M.V. Borzov. Reviewed by M.A. Teil'man. Vest. derm. i ven. 32 no.5:77-78 S-O '58 (MIRA 11:11)
(MOLDAVIA--DERMATOMYCOSIS)
(BORZOV, M.V.)

TEYTEL'MAN, M.A.; RYBAKOVA, L.V.

Treatment of acute pyodermas with erythromycin. Sov. med. 25 no.10: 136-137 O '61. (MIRA 15:1)

1. Iz poliklinikl imeni 15-y godovshchiny Oktyabrya (glavnyy vrach I.S. Khoroshev), Sverdlovsk.
(SKIN--DISEASES) (ERYTHROMYCIN)

TEYTEL'MAN, M.A., kand.med.nauk (Sverdlovsk)

Sanitation of minor occupational skin wounds. Med. sestra 21 no.1:39-41 Ja '62. (MIRA 15:3)
(SKIN--WOUNDS AND INJURIES)

TEYTEL'BAUM, M.M., polkovnik med.sluzhby, kand.med.nauk; SHERSHEVER, S.M., polkovnik meditsinskoy sluzhby, kand.med.nauk; KRYLOVA, L.P.

Symptomatology of gastric and duodenal ulcer in young subjects. Voen.-med.zhur. no.2:77-79 F '60. (MIRA 13:5)
(PEPTIC ULCER)

TEYTEL'BAUM, M.Z. (Saratov, ul. Gogolya, d.76, kv.3)

Some problems of primary invalidity following traumas of the locomotor apparatus; based on materials of the Saratov Medical Expert Commission on Work Ability. Ortop., travm. i protez. 26 no.2:46-50 F '65. (MIRA 18:5)

1. Iz TSentral'nogo instituta ekspertizy trudosposobnosti i organizatsii truda invalidov (dir. - prof. D.I. Gritskevich) i Saratovskogo instituta travmatologii i ortopedii (dir. - dotsent Ya. N. Rodin).

TREPENENKOV, I.I., kand.tekhn.nauk; TEYTEL'BAUM, Z.I., inzh.

Tractors for 1965. Trakt. i sel'khozmash. no.1:1-11 Ja '65.
(MIRA 18:3)

1. Gosudarstvennyy soyuznyy nauchno-issledovatel'skiy traktornyy institut.

[illegible]

ACCESSION NR: AP5[illegible] [illegible]

AUTHOR: Teytel'man, A. Ya.; Okhlopkov, V. I.; Odinochkin, V. D.

TITLE: A device for protecting inspection ports in high temperature vacuum installations. Class 18, No. 17141[illegible]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. [illegible]1, 1965, 33-34

TOPIC TAGS: metal vapor condensation, test chamber

ABSTRACT: This Author's Certificate introduces a device for protecting inspection [illegible] metal [illegible] high temperature vacuum [illegible] The device consists of a cassette [illegible] parent film [illegible] The [illegible] vice is designed for assuring continuous visual observation and [illegible] the various processes taking place inside the vacuum chamber. The unit is equipped with a drive which [illegible] surface.

Card 1/3

ACCESSION NR: AP5017803

ASSOCIATION: none

SUBMITTED: 23Mar62 ENCL: 01 SUB CODE: IE, MM

NO REF SOV: 000 OTHER: 000

Card 2/3

L 50174-65
ACCESSION NR: AP5017803

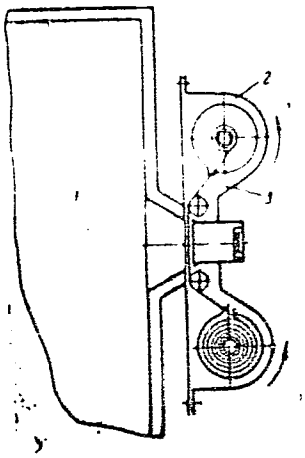


Fig. 1. 1--vacuum chamber; 2--coils;

Card 3/3

[redacted], V. F.

Dissertation: "Hydraulic Design of Locks Taking Into Consideration the Conditions of Settling of a Ship in the Lock." Cand Tech Sci, Leningrad Inst of Engineers of Water Transport, Leningrad, 1953. (Referativnyy Zhurnal--Mekhanika, Moscow, Apr 54)

SO: SUM 243, 19 Oct 1954

[redacted], V.F., kand.tekhn.nauk

New method for the design of navigation locks. Trudy LIVT no.13:62-72 '61. (MIRA 14:3)
(Locks(Hydraulic engineering))

TEYVEL', A.L.; ALEKSEYEV, P.V.

New method of unrolling rolls of the shell of a hot-blast stove.
Prom. stroi. 39 no.11:33-36 '61. (MIRA 14:12)

1. Proyektnaya kontora tresta Stal'montazh.
(Air preheaters)

ALEKSEYEV, P.V., inzh.; TEYVEL', A.L., inzh.

Mechanized assembling of blast-furnace cooling units. Mov.tekh. mont.i spets.rab. v stroi. 21 no.5:4-6 My '59.
(MIRA 12:7)

1. Proyektnaya kontora tresta Stal'montazh.
(Blast furnaces--Cooling)

TEYVEL', A.L., inzh.; ALEKSEYEV, P.V., inzh.

Unit for the manufacture of rolled stock for sheet elements up to 16 mm. thick. Prom.stroi. 40 no.11:53-56 '62. (MIRA 15:12)

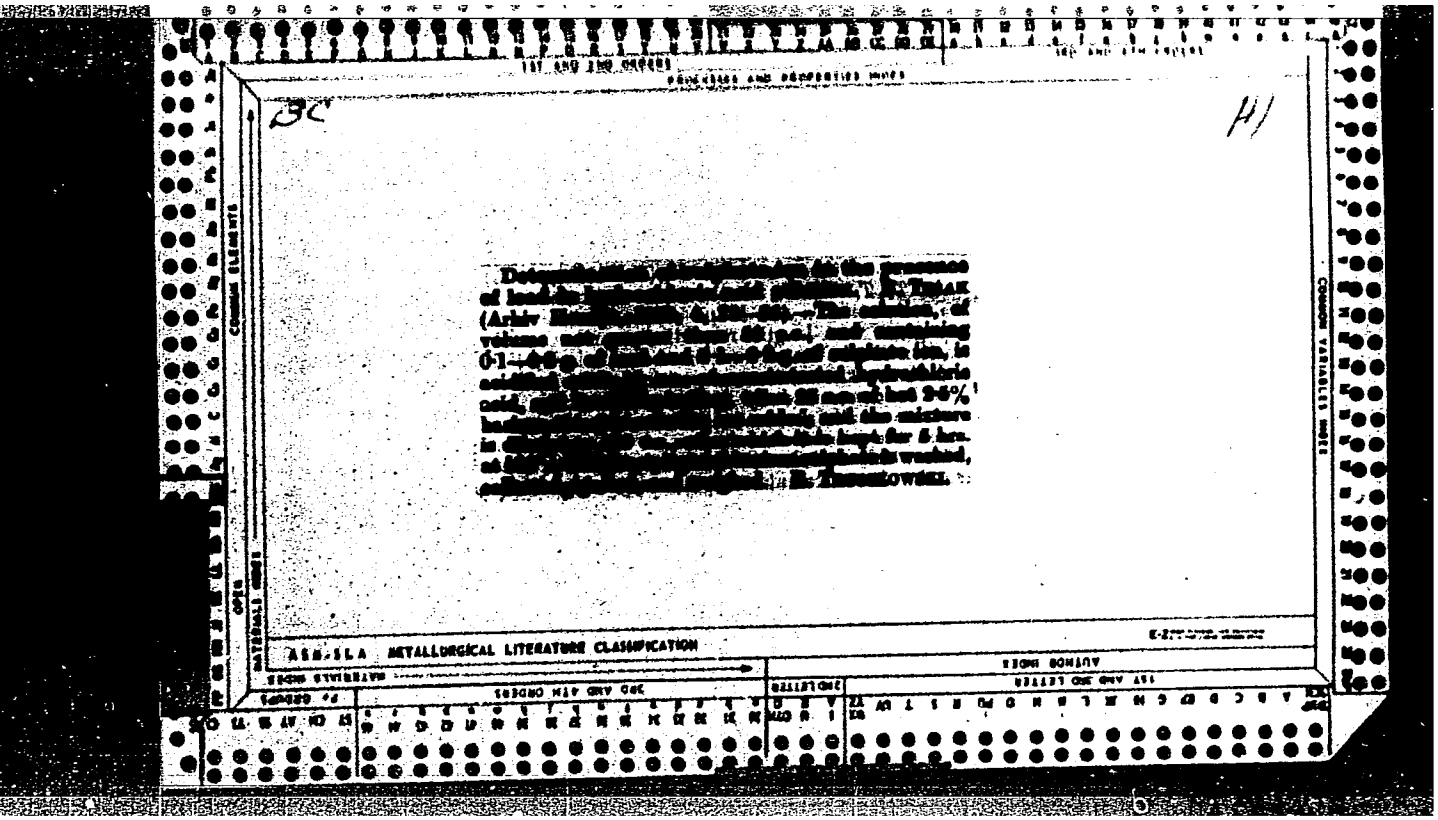
1. Proyektnaya kontora Gosudarstvennogo tresta po montazhu stal'nykh konstruktsiy Glavstal'konstruktsii Ministerstva stroitel'stva SSSR.

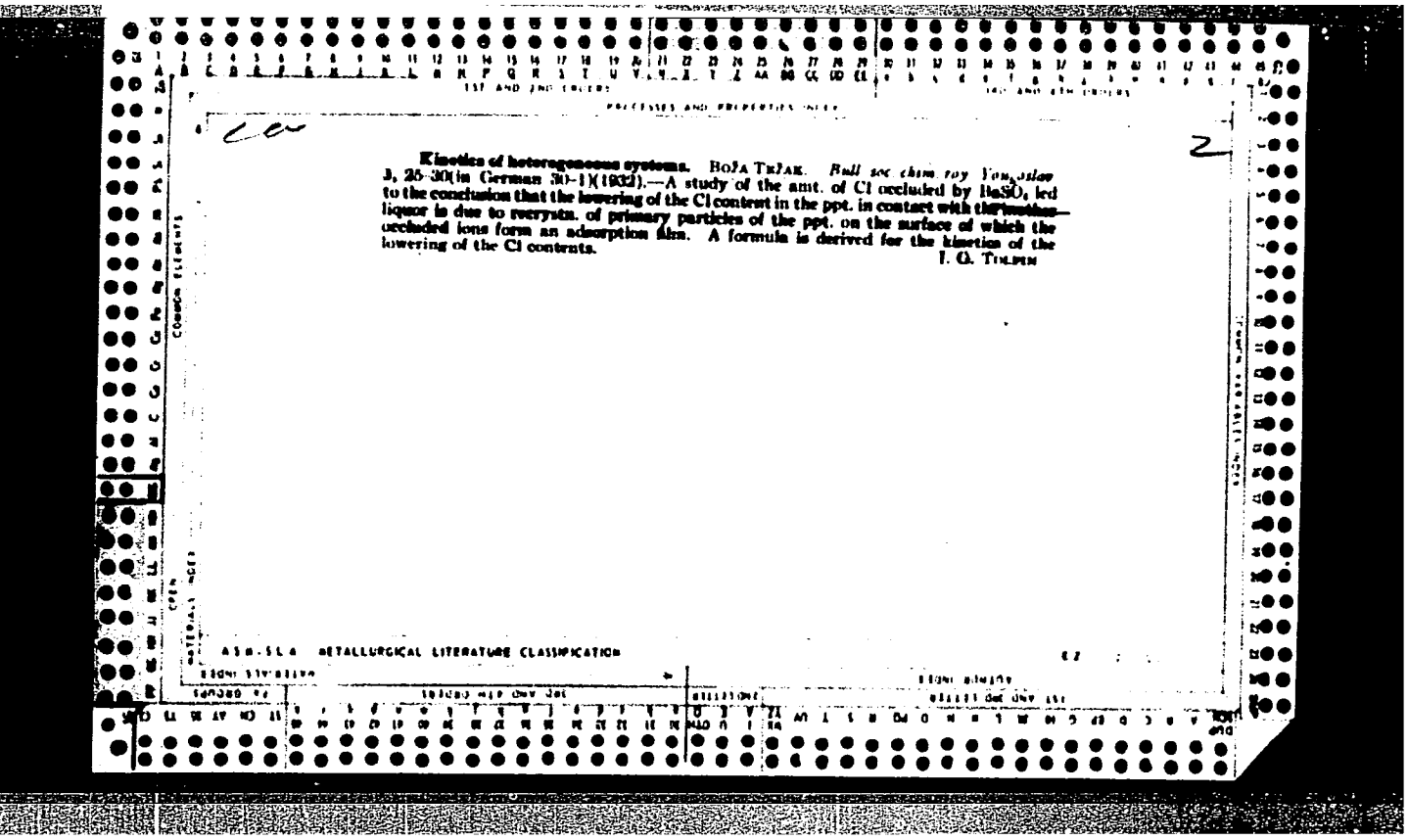
(Steel, Structural)

BERISHVILI, G.A. Prinimali uchastiye: GABIDZASHVILI, V.D., inzh.; KACHARAYA, G.G., inzh.; KASHAKHASHVILI, G.N., inzh.; PIRTSKHALAVA, D.T., inzh.; TEZADZE, A.I., inzh.

Results of experiments in studying the effective use of short-delay blasting. Trudy Inst.gor.dela AN Gruz.SSR 2:215-227 '60. (MIRA 14:10)

1. Institut gornogo dela AN Gruzinskoy SSR (for Gabidzashvili, Kacharava, Kashakashvili, Pirtskhalava, Tevzadze).
(Blasting)

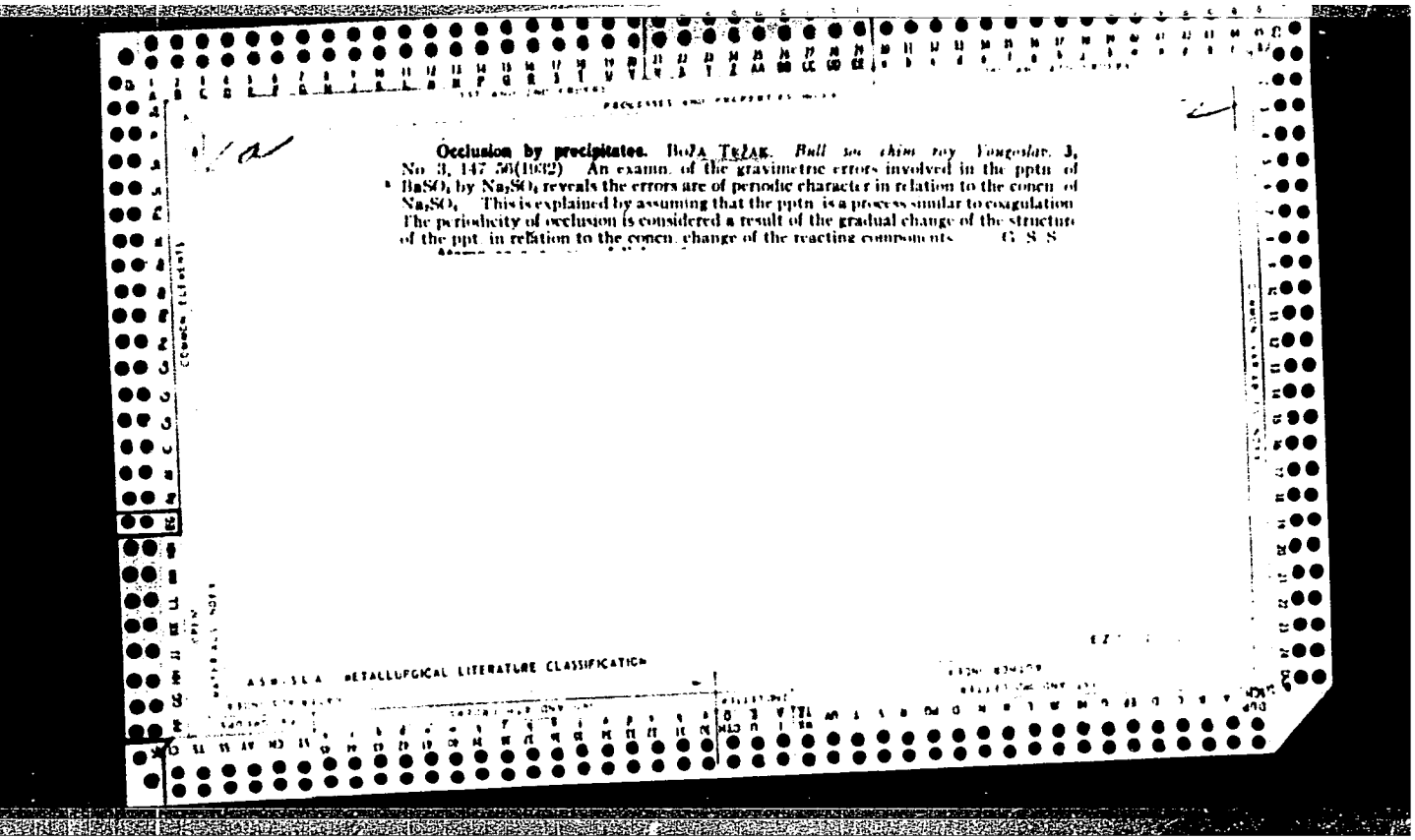




Kinetics of heterogeneous systems. BOJA TRJAK. *Bull soc chim roy Yougoslav* 3, 25-30(in German 30-1)(1932).—A study of the amt. of Cl occluded by $BaSO_4$ led to the conclusion that the lowering of the Cl content in the ppt. in contact with the mother liquor is due to recrysta. of primary particles of the ppt. on the surface of which the occluded ions form an adsorption film. A formula is derived for the kinetics of the lowering of the Cl contents.

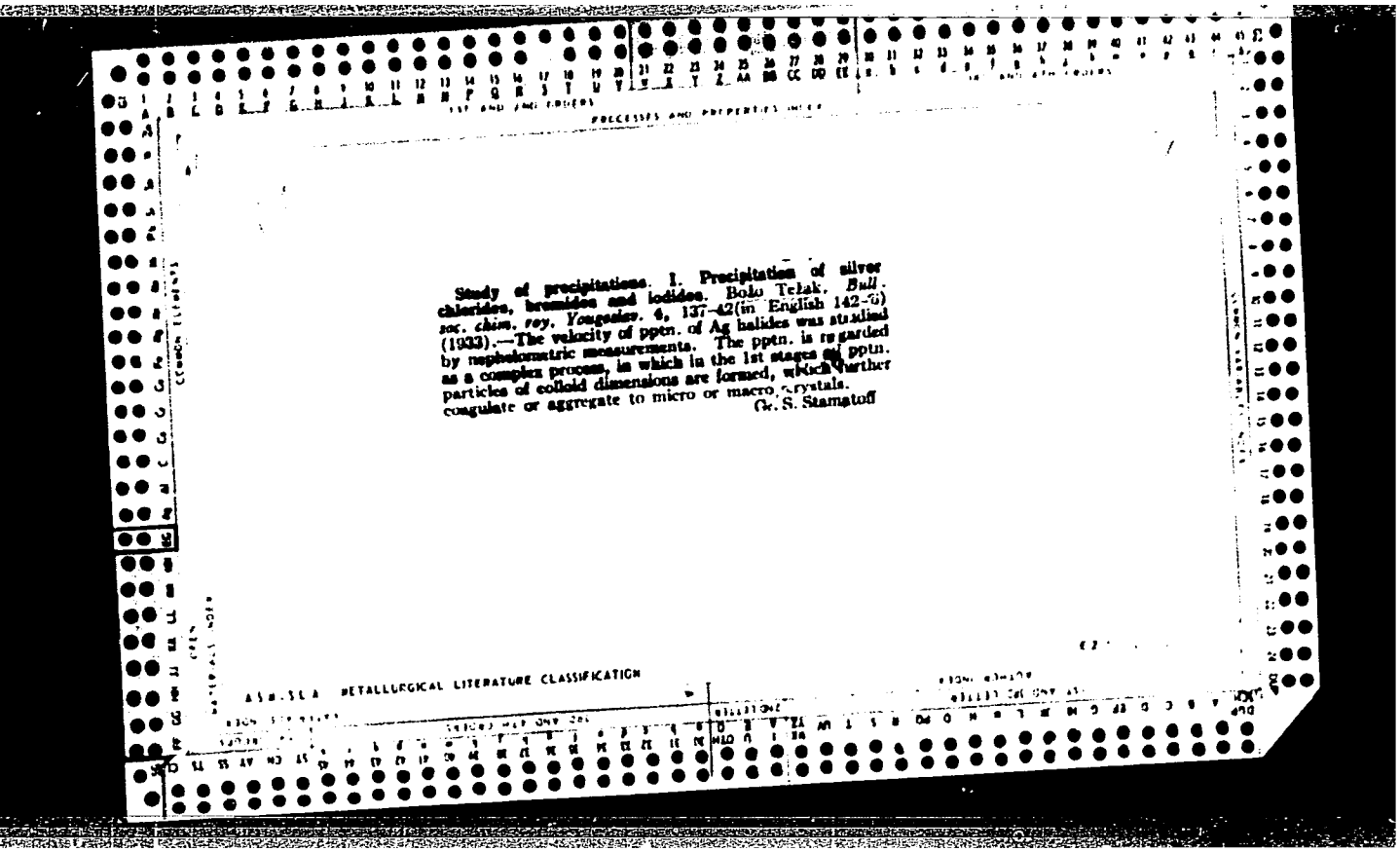
I. G. TRUPIN

A58-514 METALLURGICAL LITERATURE CLASSIFICATION



Occlusion by precipitates. Boja Tejak. *Bull soc chim roy Yougoslav.* 3, No. 3, 147-56(1932) An examn. of the gravimetric errors involved in the pptn of $BaSO_4$ by Na_2SO_4 reveals the errors are of periodic character in relation to the concn of Na_2SO_4. This is explained by assuming that the pptn is a process similar to coagulation. The periodicity of occlusion is considered a result of the gradual change of the structure of the ppt. in relation to the concn. change of the reacting components. G. S. S.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Study of precipitations. I. Precipitation of silver chlorides, bromides and iodides. Bolu Teŀak. *Bull. soc. chim. roy. Yougoslav.* 4, 137–42(in English 142–6) (1933).—The velocity of pptn. of Ag halides was studied by nephelometric measurements. The pptn. is regarded as a complex process, in which in the 1st stages of pptn. particles of colloid dimensions are formed, which further coagulate or aggregate to micro or macro crystals.
Gr. S. Stamatoff

A1a.5L1 METALLURGICAL LITERATURE CLASSIFICATION

TEZAK, B.

Yugoslavia (430)

Technology

The aggregational character of the Weimarn's precipitation curve for $BaSO_4$. p. 9, ARHIV ZA KEMIJU, Vol. 19, no. 1-4, 1947.

East European Accessions List, Library of Congress, Vol. 1, no. 14, Dec. 1952. UNCLASSIFIED.

Bi Abs.

(Separation Gen.)

2432. Characterisation of precipitation maxima with special respect to coagulation phenomena. B. Težak (*Arh. Kemiju*, 1947, 19, 19—29).—The turbidity–concn. graph, obtained 10 min. after admixture of 0·0002N-$AgNO_3$ and 0·0001—0·0002N-NaCl shows, on either side of the general solubility curve, a crystallisation max., formed on the limits of the region of ionic solubility, and a concn. max. produced on the limits of the complex solubility region. The last max. is increasingly displaced by substituting $MgCl_2$, $AlCl_3$, and $ThCl_4$ for NaCl toward the region of lower concn. whereas the crystallisation max. is not influenced in this manner. The intermediate maxima are the isoelectric max. obtained by using equiv. amounts of the reactants, and the transition max. obtained when following the ppttn. processes during a longer time. In some cases, however, a single (secondary) max. is observed which spreads gradually from the concn. towards the crystallisation max.

S. S. Minolić.

CA Tezak, B.

Coagulation of silver halides by electrolytes and the Wolfgang Ostwald theory of the activity coefficient. B. Težak, E. Matijević, and K. Schulz (Univ., Zagreb). *Kolloid-Z.* 20, 1–15 (1918) (English summary). Review of the exptl. basis of the activity-coeff. concept, including the equation f_k = const. (Wo. Ostwald), indicated that this equation is approx. and holds best for concns., C_{sol}, greater than 10^{-2} *N*, and for the univalent coagulating cations. Choice of the concn. range 10^{-5}–10^{-2} *N*, and production of the colloid in the nascent state avoided the disadvantages of working with high concns. of the sol, namely: (1) the dialyzation procedure, hence the "denaturation" of the colloidal particle; (2) the adverse effect of ion adsorption on the colloid, hence the primary cause of deviation of f_k from constancy in the range of high C_{sol}, which was already evident from Ostwald's expts. (*C.A.* 31, 8314⁷). For Ag halides at low C_{sol}, f_k varies for a given stabilizing ion with the concn. (C_{sol}) and with the valence of the coagulating cation, *z*. The chem. nature of the stabilizing ion is another factor significantly affecting the linearity of f_k as a function of C_{sol}, *z* being next in importance. For AgI, the deviation is least when $z = 1$ (K^+). The activity coeff. rises nearly proportionally with *z*, as shown by the expts. with Ba^{++} and La^{+++} ions. For AgBr f_k rises with *z*, but no proportionality is observed (intersection of the f_k-C_{sol} curves obtained with K^+ and Ba^{++}, and an unexpectedly abrupt rise for La^{+++}). For AgCl there is no parallelism between f_k and *z*, the rise following a distorted order: Ba^{++}, La^{+++}, K^+. The relative constancy of f_k at C_{sol} values higher than 10^{-2} is due to a slight effect of adsorption, namely, the dominant cation is adsorbed on the colloidal particle making the ratio m_k/C_{sol} nearly negligible (where m_k is the molar concn. of the coagulating salt). This effect is the more pronounced, the higher the valence, *z*, of the dominating cation. The rise of f_k at low C_{sol} values is in part due to a considerable increase of the ratio m_k/C_{sol} in the region below 10^{-3} *N*. The concn. of the stabilizing ion was found almost without effect on f_k when kept below 10^{-3} *N*. The "structure" of the cross-section of the boundary layer sol/coagulum is also an important factor, detg. for f_k the extent of its deviation from linearity. This additive property varies with the conditions of expt.: (1) Direction and extent of displacement of the dissoen. ⇄ assoen. equil. in the liquid phase. Both these factors can be evaluated approx. from the value of k^4, which is the crit. distance

between the coagulating and the stabilizing ion, as well as from $d_{diss.}$, which is the diam. of the double-layer atm. It was shown previously that $d_{diss.}$ is a function of k^1 and of the other expt. conditions, such as the d. of the elec. charge on the colloidal particles of the coagulum, etc. (*C.A.* **37**, 6519[1]; **42**, 7602*e*). (2) The statistical distribution of elec. charges in the boundary layer, which is a function of z and of the concn. gradient of the stabilizing ion, as well as of the other ions present in the sol. (3). The nature and configuration of all component ions in the liquid phase. The detn. of the crit. concn. of the sol., C_{sol}, was done with high accuracy by measuring the changes with time in the intensity of the Tyndall cone (Težak, *C.A.* **30**, 2170[9]). The expts. were performed on a series of aq. $AgNO_3$ solns. (4×10^{-4}, 2×10^{-4}, 4×10^{-4}, and 1×10^{-3} *N*). For each concn. of $AgNO_3$ the concn. of the stabilizing ion was varied gradually from that equiv. to the Ag ion to the 1×10^{-2} *N*. The valence, z, of the dominating cation was varied from 1 to 3 by experimenting separately with K^+, Ba^{++}, and La^{+++} as nitrates. The coagulum was formed by slowly decanting 5 cc. of the $AgNO_3$ soln. into 5 cc. of the aq. soln. of *HCl*, *HBr*, or KI plus HNO_3. In each case the desired coagulating salt was introduced beforehand. The mixing was achieved by decanting back and forth repeatedly the prepd. sol. from one test-tube into another for 20-25 sec. The test-tubes with the sol were kept at 20° in a thermostat during the course of the expt. The chamber of the Tyndallometer was also kept there during the readings. The latter were taken after mixing, at intervals of 1, 2, 4, 5, 10, 20, and 60 min. in 3 spectral regions: blue, green, and red. Next, the tyndallograms were plotted, with the readings (converted into nephelometric values) as ordinates and with the logs of the concn. of the stabilizing ion as abscissas. The crit. concn. of the coagulating cation, $C_{coagul.}$, was evaluated from the slope of the tyndallometric curves corresponding to the 10-min. interval. This was done by extrapolating to zero turbidity, which approximated best the value obtainable by direct analysis. The f_1 value was calcd. from above data with the aid of the Wo. Ostwald equation after converting $C_{coagul.}$ into m_3 values. In these calcns. the concns. of all components were adjusted for the total vol. of the sol (10 cc.). The instrument used for light-intensity measurements was a combination of a nephelometer (Zeiss) and a photometer (Pulfrich).

C. S. Shapiro

TEZAK, B.

Yugoslavia (430)

Technology

Coprecipitation and the relationship between adsorption, occlusion and mixed crystal formation. p. 16, Arhiv Za Kemiju, Vol. 20, no. 1-4, 1948.

East European Accessions List, Library of Congress, Vol. 1, no. 14, Dec. 1952. UNCLASSIFIED.

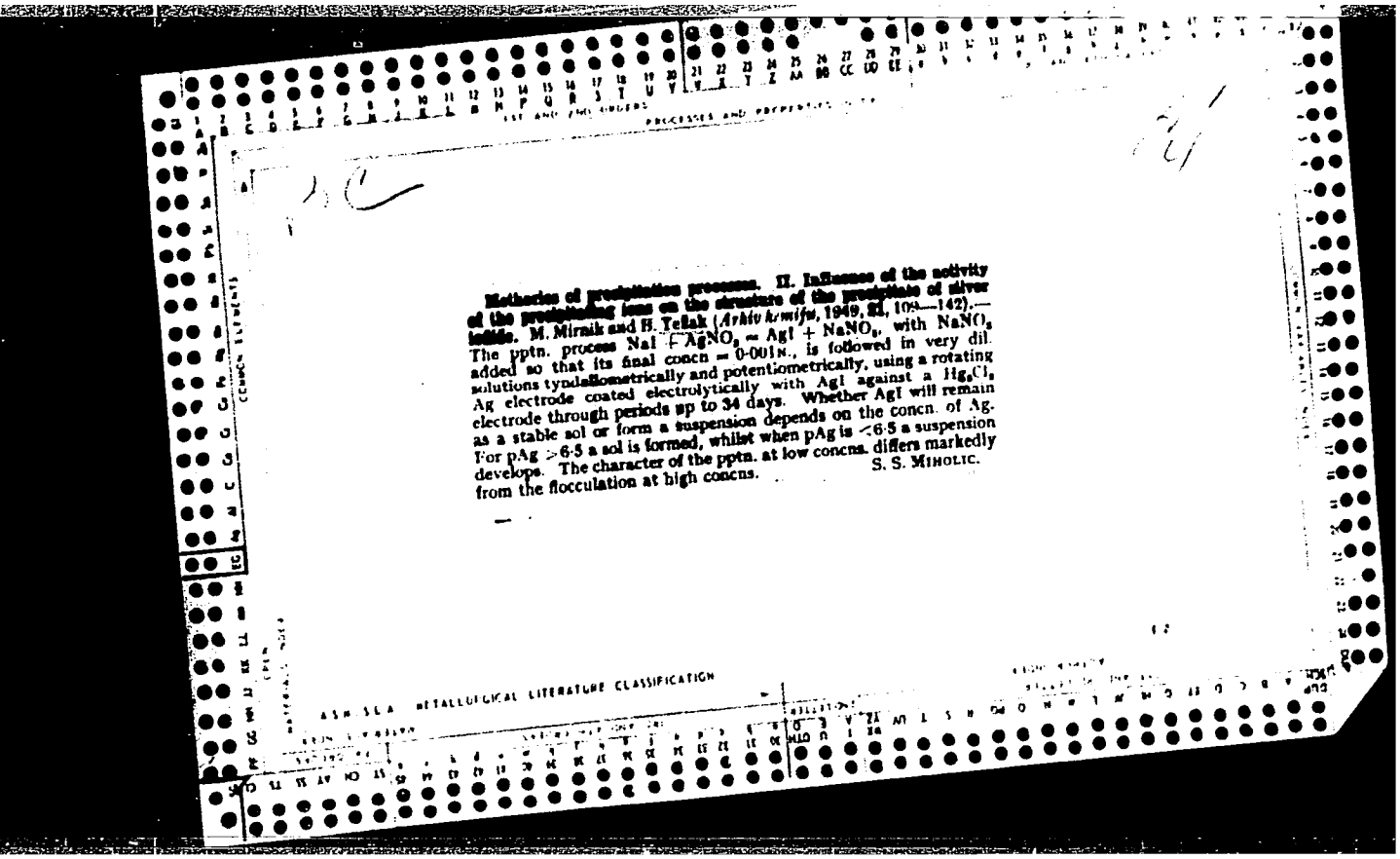
TEZAK, B.

Yugoslavia (430)

Technology

Methorics, a name for the physics and chemistry of the borderline region. p. 93; Methorics of the precipitation processes. I. Some concepts of crystal growth from electrolytic solutions. p. 96, ARHIV ZA KEMIJU, Vol. 21, no. 1-4, 1949.

East European Accessions List, Library of Congress Vol. 1, no. 14, Dec. 1952. UNCLASSIFIED.



Mechanism of precipitation processes. II. Influence of the activity of the precipitating ions on the structure of the precipitate of silver iodide. M. Mirnik and B. Težak (*Arhiv kemiju*, 1949, **21**, 109—142).—The pptn. process $NaI + AgNO_3 = AgI + NaNO_3$, with $NaNO_3$ added so that its final concn = 0·001N., is followed in very dil. solutions tyndallometrically and potentiometrically, using a rotating Ag electrode coated electrolytically with AgI against a Hg_2Cl_2 electrode through periods up to 34 days. Whether AgI will remain as a stable sol or form a suspension depends on the concn. of Ag. For pAg >6·5 a sol is formed, whilst when pAg is <6·5 a suspension develops. The character of the ppta. at low concns. differs markedly from the flocculation at high concns.

S. S. MIHOLIC.

TEZAK, B.

Yugoslavia (430)

Science-Periodicals

An analysis of the present state of chemical literature and the need for the establishment of an international chemical periodical. Text. in English. p. 206. ARHIV ZA KEMIJU. (Hrvatsko kemijsko drustvo i Sekcija kemicara Drustva

East European Accessions List, Library of Congress, Vol 2, No. 6, June 1953, Unclassified

"Card 1 of 2"

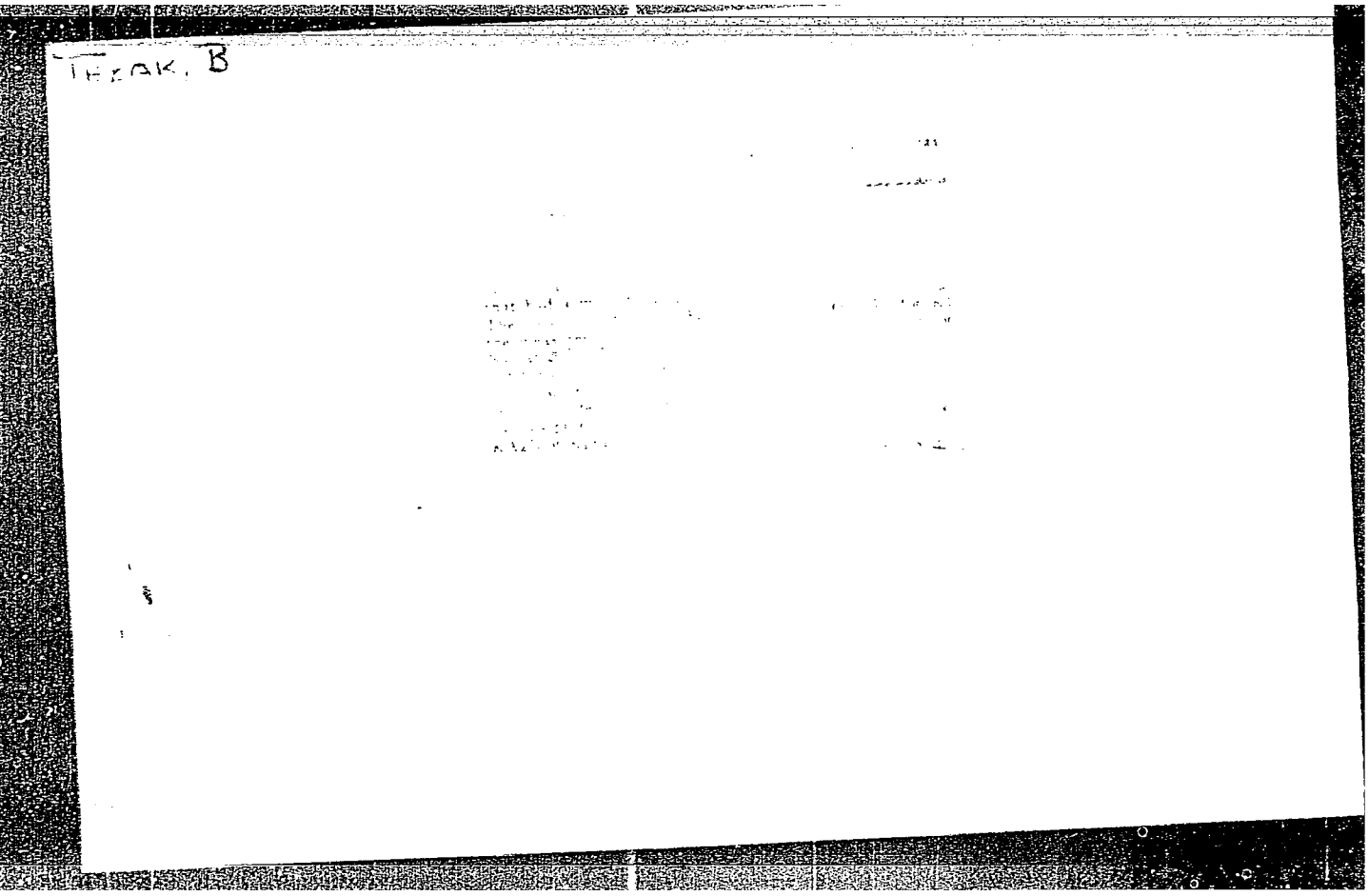
TEZAK, B.

Yugoslavia (430)

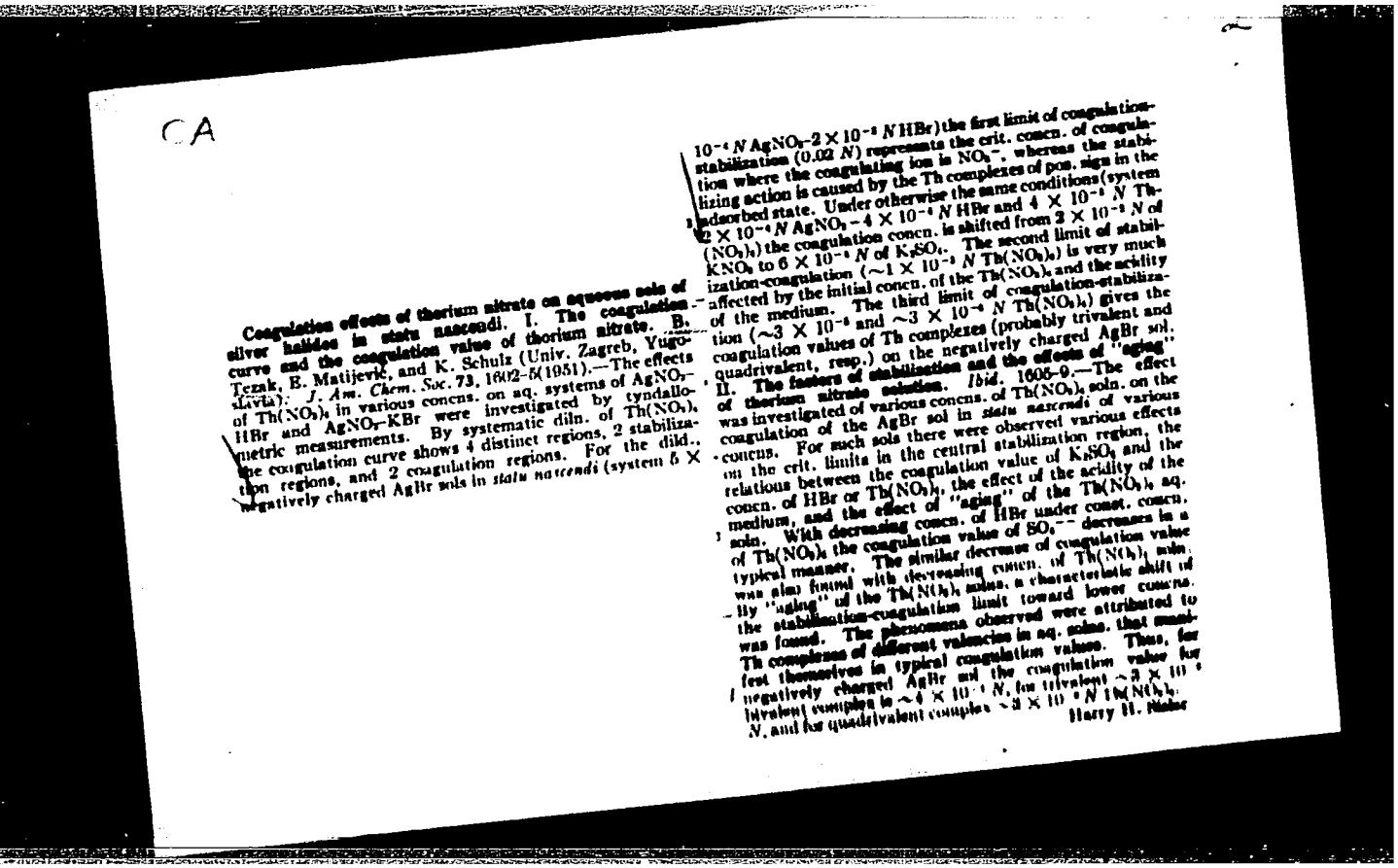
(continued) inzenjera i tehnicara Hrvatske)
Zagreb. /Quarterly of the Croatian Chemical
Society and the Chemical Section of the Croatian
Society of Engineers and Technicians. Some
articles written in English or German, Summaries
in English or other western languages/ Vol. 23,
no. 3/4, 1951

East European Accessions List, Library of Congress,
Vol 2, No. 6, June 1953, Unclassified.

"Card 2 of 2"



An analysis of the present state of chemical literature and the need for the establishment of an international chemical periodical Bolo Težak (Univ. Zagreb, Croatia, Yugoslavia) *Arhiv Kem.* 23, 208–17 (1951) (in English).—There are about 4000 periodicals of chem. interest, 400 of which are used frequently by chemists. Important purely chem. journals and journals closely related to chemistry number 100. Of these 100 [illegible] 35% cover all fields of chemistry [illegible] and 5% miscellaneous fields. Of the 4000 journals 40% are in English, 25% in German, 10% French, 8% Russian, 7% Spanish and Portugese, 4% Italian, 5% English-French-German, and 11% in other languages. The no. of copies, printed pages, and words of publications in English well outweigh the total no. of all the others. Reasons are given for establishing an international chem. periodical and an organizational plan is outlined, with the Intern. Union of Pure and Applied Chemistry as owner. D. S. Hessemer



CA

Coagulation effects of thorium nitrate on aqueous sols of silver halides in statu nascendi. I. The coagulation curve and the coagulation value of thorium nitrate. B. Težak, E. Matijević, and K. Schulz (Univ. Zagreb, Yugoslavia). *J. Am. Chem. Soc.* 73, 1602–5(1951).—The effects of $Th(NO_3)_4$ in various concns. on aq. systems of $AgNO_3$–HBr and $AgNO_3$–KBr were investigated by tyndallometric measurements. By systematic diln. of $Th(NO_3)_4$ the coagulation curve shows 4 distinct regions, 2 stabilization regions, and 2 coagulation regions. For the dild., negatively charged AgBr sols in *statu nascendi* (system 5 × 10^{-4} *N* $AgNO_3$–2 × 10^{-3} *N* HBr) the first limit of coagulation-stabilization (0.02 *N*) represents the crit. concn. of coagulation where the coagulating ion is NO_3^-, whereas the stabilizing action is caused by the Th complexes of pos. sign in the adsorbed state. Under otherwise the same conditions (system 2 × 10^{-4} *N* $AgNO_3$ – 4 × 10^{-4} *N* HBr and 4 × 10^{-3} *N* $Th(NO_3)_4$) the coagulation concn. is shifted from 2 × 10^{-3} *N* of KNO_3 to 6 × 10^{-3} *N* of K_2SO_4. The second limit of stabilization-coagulation (~1 × 10^{-3} *N* $Th(NO_3)_4$) is very much affected by the initial concn. of the $Th(NO_3)_4$ and the acidity of the medium. The third limit of coagulation-stabilization (~3 × 10^{-4} and ~3 × 10^{-3} *N* $Th(NO_3)_4$) gives the coagulation values of Th complexes (probably trivalent and quadrivalent, resp.) on the negatively charged AgBr sol. **II. The factors of stabilization and the effects of "aging" of thorium nitrate solution.** *Ibid.* 1605–9.—The effect of various concns. of $Th(NO_3)_4$ soln. on the coagulation of the AgBr sol in *statu nascendi* of various concns. For such sols there were observed various effects on the crit. limits in the central stabilization region, the relations between the coagulation value of K_2SO_4 and the concn. of HBr or $Th(NO_3)_4$, the effect of the acidity of the medium, and the effect of "aging" of the $Th(NO_3)_4$ aq. soln. With decreasing concn. of HBr under const. concn. of $Th(NO_3)_4$ the coagulation value of SO_4^{--} decreases in a typical manner. The similar decrease of coagulation value was also found with decreasing concn. of $Th(NO_3)_4$ soln. By "aging" of the $Th(NO_3)_4$ soln. a characteristic shift of the stabilization-coagulation limit toward lower concns. was found. The phenomena observed were attributed to Th complexes of different valencies in aq. solns. that manifest themselves in typical coagulation values. Thus, for negatively charged AgBr and the coagulation value for trivalent complex is ~4 × 10^{-4} *N*, for trivalent ~3 × 10^{-3} *N*, and for quadrivalent complex ~3 × 10^{-2} *N* $Th(NO_3)_4$.

Harry H. Heinz

TEZAK, B

Measuring coagulation processes. IV. Coagulation values of neutral electrolytes in mixtures water-alcohol for the negative sols of silver chloride in the nascent state. B. Težak and J. Kratohvil (Fac. Sci., Zagreb, Yugoslavia); *Arhiv Kem.* 24, 1–10(1952)(English summary); cf. *C.A.* 46, 9912g.—0.0002*N* $AgNO_3$ and 0.002*N* HCl were caused to react with each other in the presence of KNO_3, $Ba(NO_3)_2$, and $La(NO_3)_3$, 0.002*N* in solns. in H_2O which contained 0, 30, 50, 70, and 87% by wt. EtOH, and the Tyndall effect was measured after 10 min. with green light. In other expts. the concn. of the HCl was changed to 0.00022, 0.004, 0.008, and 0.006*N*. The critical concns. were obtained by extrapolation of the 10-min. pptn. curve to zero turbidity. Bjerrum's crit. distance $d_c = z^+z^-e^2/2DkT$, where z^+ and z^- are the valencies of the ions, e is charge of the ion in electrostatic units, D dielec. const. of the medium, k Boltzmann const., and T abs. temp., is a function of the corresponding critical concns. for the coagulation.

Werner Jacobson

(1)

TEZAK, B.

"A note on the general scheme for the mechanism of coagulation and peptization," p. 25
(Arhiv Za Kemiju., Vol. 24, 1952, Zagreb)

SO: Monthly List of East European Accessions, Vol. 2, No 9 Library of Congress, September 1953, Uncl.

TEZAK, B.

Tezak, B. Kratohvil-Babic, [illegible].
"The effect of gelatin on crystallizing and coagulating processes in precipitation." p. 67.

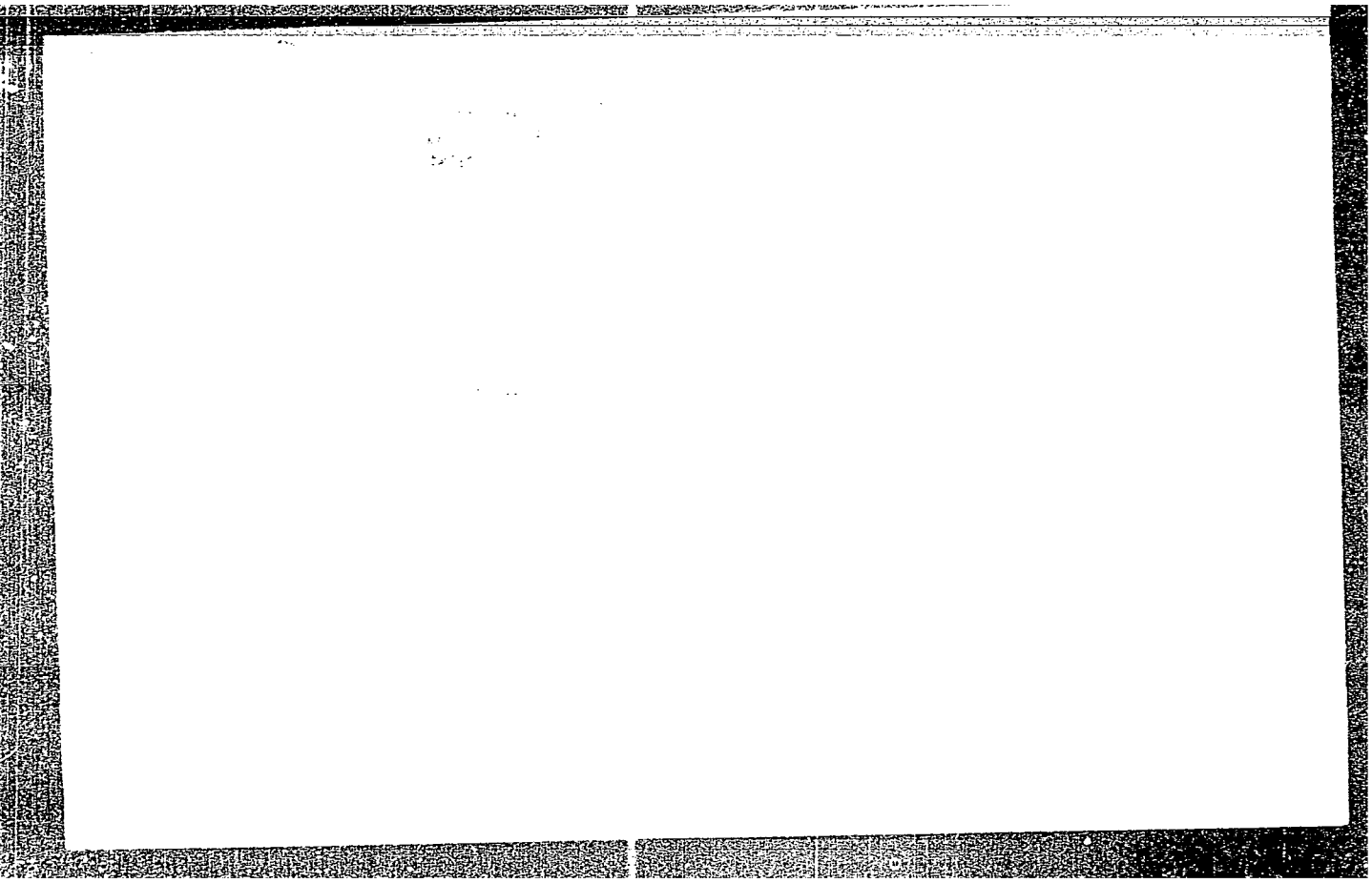
(Arhiv Za Kemiju, Vol. 24, 1952, Zagreb)

SO: Monthly List of East European Accessions, Vol. 2, No. 9, Library of Congress, September 1953, Uncl.

CA

2

Coagulation mechanism of hydrophobic sols (discussion of experimental results with silver halide sols in the nascent state). E. Matijević and B. Težak (Univ. Zagreb, Yugoslavia). *Kolloid-Z.* 125, 1-13(1952).—The important theories of coagulation are reviewed. The advantages of Ag halide sols, as well as of measurement of the sols in the nascent state, are pointed out. The various max. (concn., crystn., transition, isoelec.) of the coagulation curves are differentiated and discussed. The effects of opposite ion charge, amt. of ions, and sol concn. on the electrolyte coagulation of the Ag halide sols were established. The applicability of the coagulation method for detg. the complex-forming ions in electrolyte solns. was indicated with $Th(NO_3)_4$ and $Al(NO_3)_3$ solns. The coagulation theories of Wo. Ostwald and others were examd. critically, and agreement was indicated with Ostwald's views that the general state of the electrolyte soln. is of utmost importance in coagulation of hydrophobic colloid systems. S. I. A.



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14 ZHK, B.

6

Formation of silver, zinc and aluminum hydroxides in alkaline medium obtained by hydrolysis of urea. P. Krleža and B. Težak (Univ. Zagreb, Yugoslavia). *Arhiv Kem.* 25, 125–34(1953)(English summary).—Following the technique by Willard (C.A. 45, 63e) an attempt was made to ppt. the sols of AgOH, $Zn(OH)_2$, and $Al(OH)_3$ in an aq. medium at 90°, which contained urea in concns. from 0.05 to 0.1 *M*, by keeping the nitrates of the metals in contact with the soln. for 1–6 hrs. The amts. of the hydroxide sols formed were detd. tyndaliometrically. If the urea soln. is first heated for 4–6 hrs. and then mixed with the nitrates the results are very different from those obtained when the nitrates are heated from the beginning with the urea soln.; this is explained by the great pH variations of the urea solns. of from 6.8 to 9.1, with respect to time and concn. The nitrate concns. were varied from 5×10^{-4} *N* to 1×10^{-1} *N*, with hydroxide formation setting in at approx. 1×10^{-3} *N*, for all of them.

Werner Jacobson

(1)

TEZAS, D

Coagulation effects of $Na_4P_2O_7$ on silver halide sols in the nascent state. E. Matijević and B. T. Jal (Univ. Zagreb, Yugoslavia). *Trans. Faraday Soc.* 25, [illegible] English; cf. *C.A.* 46, 6466*a*.- Hydrophobic sols of Ag halides in the nascent state were ppd. with aq. solns. of $Na_4P_2O_7$; in order to evaluate the effects correctly the ppts. $AgNO_3$-$Na_4P_2O_7$ had to be investigated first; the tyndallograms show a max. that depends greatly on the concn. of $AgNO_3$. Addn. of HNO_3 shifts the max. to higher concns. of $Na_4P_2O_7$. The pH was measured for every expt. $Na_4P_2O_7$ in its action on AgBr in the absence or presence of 0.0005*N* to 0.005*N* HNO_3 shows 3 maxima and 3 minima in the curve, the first max. being independent of the HNO_3 added, the pH there being 9–10. The second max. is identified with the one from the $AgNO_3$-$Na_4P_2O_7$ expt., and the third is very sensitive to HNO_3 addn. Its stabilization and coagulation limits shift to higher concns. of $Na_4P_2O_7$ if HNO_3 is added. In the same expts. with AgI, the second max. disappears, but if there is an excess of Ag^+ it reappears. AgCl expts. show three maxima, one being weak. Addn. of gelatin represses the third max. completely, the second develops after several hrs., and the $Ag_4P_2O_7$ max. appears completely. The last becomes smaller only in the presence of KBr. Electrophoretic measurements show that the pos. Ag halide sols change their charge under the influence of $Na_4P_2O_7$, a charge reversal that is the general property of tetravalent counterions.

Werner Jacobson

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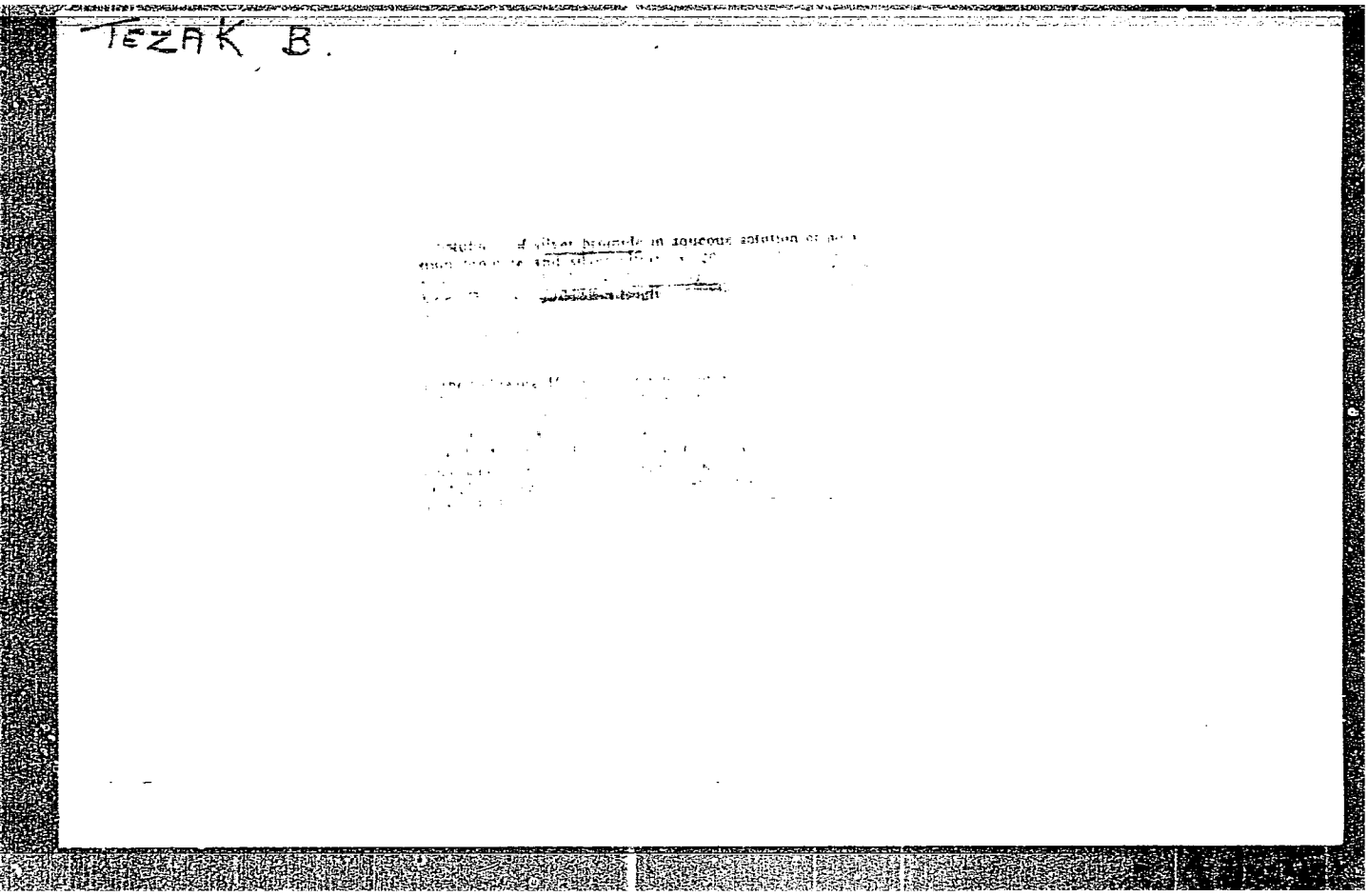

TEZAK, B.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Inorganic Chemistry

Coagulation effects of aluminum nitrate and aluminum sulfate on aqueous sols of silver halides in statu nascendi. Detection of polynuclear complex aluminum ions by means of coagulation measurements. E. Matijević and B. Težak (Univ. Zagreb, Croatia, Yugoslavia). *J. Phys. Chem.* 57, 951–4(1953); cf. *C.A.* 47, 6210f.—The crit. coagulation concn. of Al ions depends to a great extent on the age of the soln. Solns. of Al salts which had been artificially aged by warming showed a lower crit. coagulation concn. The *p*H of these solns. decreased during aging. On the basis of the data it is suggested that hydrolysis of moderately concd. solns. of Al salts leads to the formation of polynuclear ionic complexes according to $2[Al(H_2O)_6]^{+++} + 2H_2O = [Al(OH)(H_2O)_{5-1}]_2^{++++} + 2H_3O^+$. The complexes formed by artificial aging of Al salt solns. were very stable. It was not easy to destroy the complexes either by subsequent dilu. or by addn. of various amts. of mineral acids. H. L., Jr.

TEZAR, B020

TEZAR, B020

"The precipitation processes as indicators for micellar structures. The effect of mixtures of electrolytes, of solvents, and of colloid substances. Božo Težak, B. Matijević, K. Schulz, J. Kratohvil, R. Wolf, and V. Čermicki (Univ. Zagreb, Yugoslav.). *J. Colloid Sci.* 1954, Suppl. 1, 118-27; cf. *C.A.* 47, 6219*i*.—The characteristic max. and crit. limits encountered in detg. the aggregation of inorg. salts of low poly. in the presence of electrolytes can be used to obtain an insight into the structures of the micellar (i.e., interboundary) layer between crystal and soln. Examples given are: (1) the antagonistic action of mixts. of $La(NO_3)_3$ with KNO_3, K_2SO_4, $Mg(NO_3)_2$, or $MgSO_4$ in the pptn. of AgBr or AgI sols; (2) the effect of dioxane on the ability of KNO_3, $Ba(NO_3)_2$, and $La(NO_3)_3$ to coagulate AgBr sols; and (3) the effect of small amts. of AgI on the pptn. of AgBr or AgCl sols. H. K. Livingston

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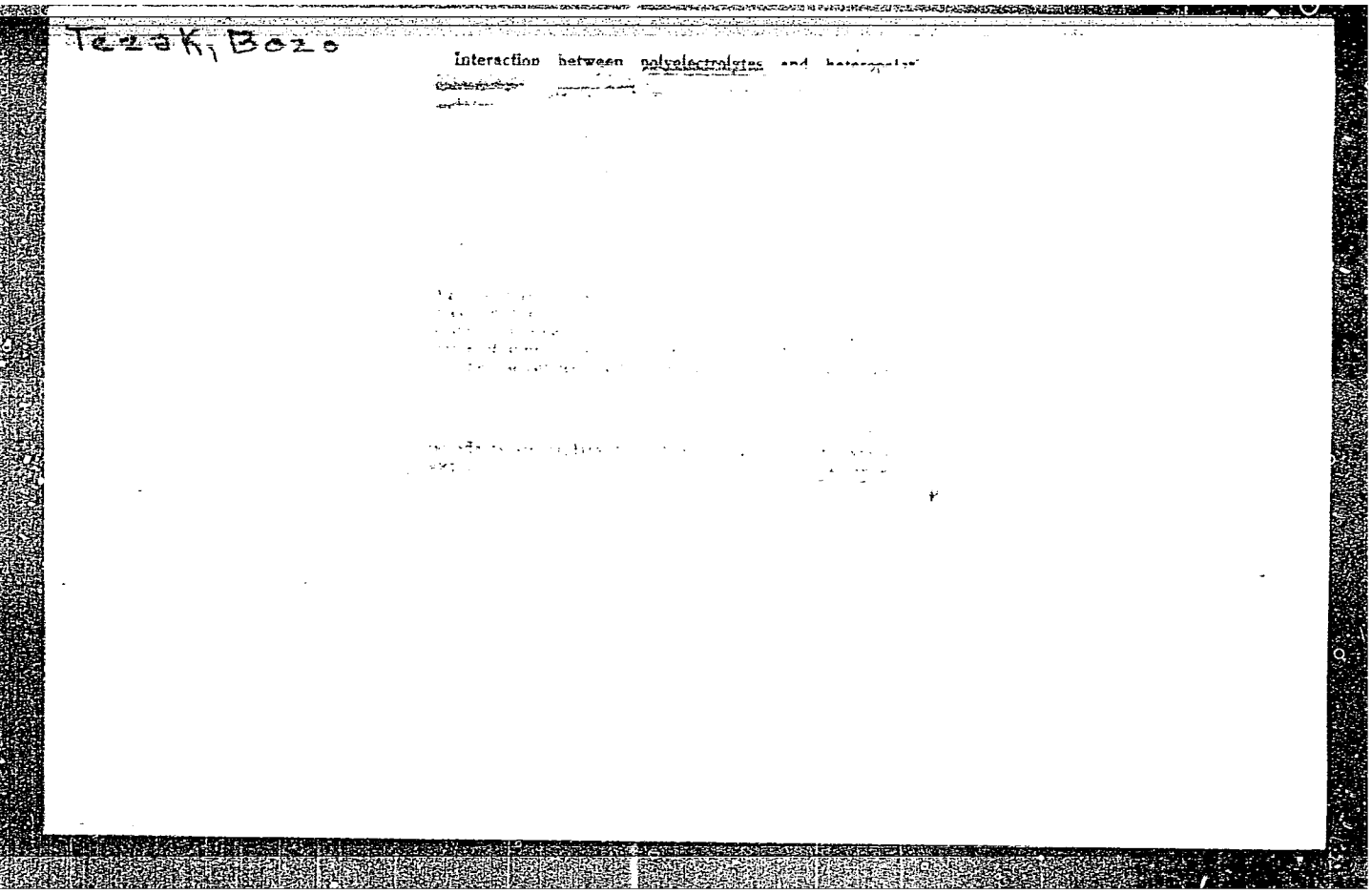

YUGO!

Coagulation effects of potassium perchlorate, potassium chlorate, and sodium benzoate on positive silver bromide sol and of potassium sulfate on positive sols of silver halides. J. Herak and B. Težak (Univ. Zagreb, Yugoslavia). *Arkiv. Kem.* 26, 1–5 (1954) (Ger.+English).—Coagulation values of $KClO_4$ (I), $KClO_3$ (II), and $NaOBz$ (III) for a pos. AgBr sol, and of K_2SO_4 (IV) for pos. AgCl, AgBr, and AgI sols in the nascent state in the presence of various concns. of the stabilizing ion (Ag^+) were detd. Pptn. systems K halide (2×10^{-4}) – $AgNO_3$ (2.5×10^{-4} to $1 \times 10^{-3}N$) in the presence of neutral electrolytes (I–IV) were investigated tyndallometrically (*C.A.* 46, 1842*e*). The concns. of the added electrolytes were gradually varied in the crit. coagulation region. The coagulation values were detd. from 10-min. concn. tyndallograms (*loc. cit.*) by extrapolating to zero turbidity. The results are represented in the diagrams of log coagulation values *vs.* log concn. of the stabilizing ion (Ag^+). The coagulation values of I–IV first increase with increasing concn. of Ag^+ (up to $1 \times 10^{-3}N$ $AgNO_3$), attaining the max.

J. Hanus & B. Teplá

values for AgBr sol of I, 4.5×10^{-4}; II, 2.5×10^{-3}; III, 4×10^{-4}; IV, $8 \times 10^{-4}N$. In the middle region of Ag^+ concns. (1×10^{-4} to $5 \times 10^{-3}N$) coagulation values of I and II are nearly const., but at the higher concns. of Ag^+ the coagulation values decrease again. This effect is supposed to be due to the additive coagulating action of NO_3^- (from $AgNO_3$) as a 2nd counterion. The coagulation values of III and IV decrease with increasing Ag^+ concns. immediately after reaching the max. Besides the additivity of coagulating action of counterions, the soly. of the compd. Ag ion-counterion is believed to play an important role. To support this assumption the diagram of log max. coagulation value *vs.* log soly. of the compd. Ag ion-counterion was constructed, with use also of the data from a previous paper (*C.A.* 48, 10406d) given for the coagulation values of acetate, propionate, butyrate, and valerate ions. The coagulation values increase with increasing soly. of the compd.-stabilizing ion (Ag^+)-counterion. The relation is linear except for the benzoate ion. The coagulation value of SO_4^{--} was about 0.1 to 0.05 times the values of I–III. This is considered to be proof of the validity of the Schulze-Hardy rule for pos. Ag halide sols. The sequence of the coagulation values of SO_4^{--} was in the order: AgI > AgBr > AgCl. This order is in accordance with the charge d. on the surface of sol particles. — J. Kratohvil

"Doctor Maksimilijan Plotnikov (1909-1954); an obituary."
Arhiv Za Kemiju, Zagreb, Vol 26, No 2, July 1954, p. 125

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress